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TONSILLOMYCOSES.

ALDO CASTELLANI, M. D.,

Professor of Tropical Medicine, Tulane University of Louisiana,

NEW ORLEANS.

For some years I have called attention to the comparative frequency of diseases of the tonsils due to the higher fungi, or mycetes, both in tropical countries and in the temperate zone. Jointly with Dr. Mackenzie Douglas and with Dr. T. Thomson, of London, I recently described several cases occurring in England. It may perhaps be of interest to deal again with the subject. Tonsillomycoses may be divided into two groups: (a) chronic tonsillomycoses; (b) acute and subacute tonsillomycoses. Chronic tonsillomycoses are well known, and have been studied by a number of observers. Acute tonsillomycoses have attracted so far little attention.

CHRONIC TONSILLOMYCOSES

Chronic tonsillomycoses are generally due to fungi of the genus Nocardia (Actinomyces, Streptothrix) Leptothrix and Vibriothrix. It may perhaps be of advantage to give a few mycological data about these genera, all belonging to the order Microsiphonales, before giving the clinical description of the conditions they are associated with.

Microsiphonales Vuillemin 1912—Definition: Hyphales with the mycelium composed of fine bacilli-form hyphae, usually 1 micron or less in diameter, generally gram-positive, when young and without distinct nuclei. Parasitic on man, animals and plants, or saphrophytic.

Remarks—This is a most interesting order, as its members are nearly always mistaken at first sight for bacilli. Hence the description of bacilli as the cause of so many fungal diseases due to these organisms.

One form of division into families is as follows:

(a) Nocardiaceae Castellani and Chalmers, 1918.

Synonyms—Actinomycetes Lachner-Sandoval, 1898; Trichomycetes Petrusky, 1903.

Definition—Microsiphonales with a mycelium.

Type Genus—Nocardia Toni and Trevisan, 1889.

(b) *Mycobacteriaceae* Miehe, 1909.

Definition—Microsiphonales without a mycelium.

Genus 1—*Mycobacterium* Lehmann and Neumann, with the tubercle bacillus as a type.

Genus 2—*Corynebacterium* Lehmann and Neumann, with the diphtheria bacillus as a type.

Most authorities place the Mycobacteriaceae under the Schizomycetes (bacteria).

Family Nocardiaceae Castellani and Chalmers, 1918.

Synonyms—Actinomycetes Lachner-Sandoval, 1898; Trichomycetes Petrusky, 1903.

Definition—Microsiphonales with a mycelium.

Type Genus—Nocardia Toni and Trevisan, 1889.

Classification—Until quite recently all the species of this order were considered to belong to one genus, *i. e.*, Nocardia, Toni and Trevisan, 1889; but Pinoy has made a subdivision, separating certain species into another genus, which he calls Cohnistreptothrix Pinoy, 1911. In doing this, he points out that the original discoverers of actinomycosis, viz., Harz and Bollinger in 1877 and Rivolta in 1878, thought that they were dealing with one organism, but when cultures were attempted it became apparent that more than one organism was im-

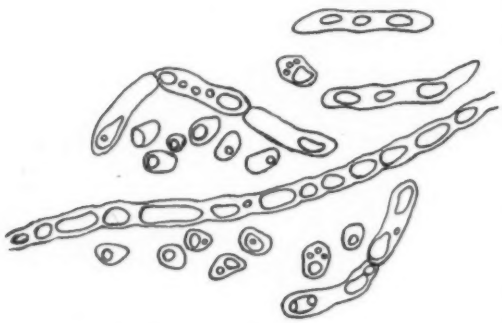

Fig. 1—Monilia tropicalis in the lesions

plicated. Thus Bostroem isolated a parasite site which grew aerobically, producing a dry membrane on the surface of broth and capable of growth at 20° C. on gelatine, but growing better on potato at 37° C. and forming chains of arthrospores. Inoculation into animals was, however, negative. This form is commonly called Nocardia bovis (Harz, 1877).

Wolf and Israel, on the other hand, obtained a parasite which only grew anaerobically and was not capable of growth at ordinary European air temperature. In broth it formed small granules or scales which fell to the bottom of the tube. These cultures often contained club-like forms, and the branching filiments broke up into bacillary or coccal-like forms. Inoculation of gelatine cultures into the peritoneal cavity of guinea-pigs produced actinomycosis. This form is commonly called Nocardia israeli (Krause, 1896). Wright maintains that this organism is the true cause of actinomycosis and that N. bovis is merely a contamination, but this is not generally accepted.

There are, therefore, two distinct organisms which can cause actinomycosis in man and oxen, viz., N. bovis (Harz, 1877) and N. israeli (Krause, 1896), but the difference between them is considerable; and therefore Pinoy has separated off the latter and its allies from the former and has founded the new genus Cohnistreptothrix Pinoy, 1911. The name is derived from the fact that in 1874 Cohn described a fungus in lachrymal concretions under the term Streptothrix Foersteri, which was considered to be a Nocardia and is now one of the species of Pinoy's Cohnistreptothrix. These two genera are distinguished as follows:

(a) Grows aerobically, easy of cultivation, and producing arthrospores; Genus 1, Nocardia Toni and Trevisan 1889.

(b) Grows best anaerobically, but can often grow aerobically, difficult of culture, and not producing arthrospores: Genus 2, Cohnistreptothrix Pinoy 1911.

The various species of these two genera may be found in Castellani and Chalmers' Manual of Tropical Medicine, 3rd edition.

A few words may be added on certain filamentous vegetal organisms on the classification of which there is much discussion, viz., organisms of the genus Leptothrix, of the genus Cladothrix, of the genus Vibriothrix.

Genus Leptothrix Kutzing, 1843—Definition: Filamentous fungi with long, very thin mycelial threads, with no capsule or only a very delicate one; non-branching non-septate, generally non-cultivable.

Type Species—Leptothrix maxima Miller.

The following species have been described:

Leptothrix maxima Miller 1882.

Synonym—L. buccalis maxima Miller. Long thin filaments, unsegmented, or with very long segments. When treated with iodine and dilute sulphuric acid gives a blue granulose reaction. Has not been cultivated.

Leptothrix innominata Miller, 1882.

Morphologically identical with L. maxima, but when treated with iodine and dilute sulphuric acid does not give a blue reaction. Has not been cultivated.

Leptothrix racemosa Miller, 1882.

Filaments somewhat thicker than those found in the two preceding species. On staining shows a peculiar beaded appearance. Has not been cultivated.

Leptothrix placoides Dobrzyniecki.

Very long thin filaments, Gram-positive, non-motile. Gelatine liquefield. Growth on agar very slow; produced very hard granular colonies. Isolated from human mouth by Dobrzyniecki.

Leptothrix fiiliformis Flexner, 1896.

Synonym—Bacillus (Leptothrix?) pyogenes filiformis Flexner, 1896. Isolated by Flexner from a rabbit. Is non-motile, of difficult cultivation, pathologic.

Leptothrix vaginalis Donne, 1885.

Found in vagina of women and animals.

Genus Cladothrix Cohn, 1875.

Definition—Filamentous fungi with mycelial threads very long, thin, showing pseudo-branching. The only well-known species is Cladothrix dichotoma Cohn.

Cladothrix dichotoma Cohn, 1875.

Long, thick mycelial threads straight or slightly undulating. They are not dichotomous, as the name would suggest; it is merely a case of pseudo-branching. The organism can be cultivated on ordinary laboratory media, forming on agar a brownish, wrinkled, tough, membranous layer, very adherent. The medium may become stained, slightly brownish. The organism is found often in waters. Chalmers and I found it, or a very similar species, in an ulcer of the foot in association with many other organisms.

Genus Vibriothrix Castellani, 1917.

The mycelial articles are of very different hsape; bacillary, vibrio-like, spirillum-like, at times club-ended. Globular or pear-shaped bodies of very variable size may be present. Gram-negative, not acid-fast. The organisms belonging to this genus are generally motile. Cultivable on ordinary media.

Type Species—Vibriothrix zeylanica Castellani, 1910.

Synonyms—Spirillum zeylanicum Castellani, 1910; Vibrio zeylanicus Castellani, 1913; Bacillus zeylanicus Castellani, 1913; Vibriothrix zeylanica Castellani 1917, Spirobacillus zeylanicus Castellani, Spagnolo, and Russo, 1918.

Remarks—Very polymorphic organism, vibrio-like, bacillus-like, and undulating forms being often found in the same preparation. Very small, medium size, and occasionally large roundish bodies are at times observed, and club-like forms may also be present.

The organism is motile, Gram-negative, not acid-fast. Easily grown on ordinary media. On potato the growth is often of a reddish color. In broth there is often a pellicle; preparations from the fluid medium generally show a predominance of vibrio-like or bacillary forms, while in the pellicle, long undulating forms are often found. On MacConkey's medium the colonies are white, and somewhat resemble those of the typhoid-dysentery group. The organism does not ferment any of the usual laboratory carbohydrates or alcohols; glucose, levulose, galactose, maltose, lactose, saccharose, mannitol, dulcite, raffinose. There is, in fact, frequently a production of alkalinity. Milk is not clotted and is rendered

alkaline, and certain strains after several weeks may induce a certain degree of peptonization. The great majority of strains are non-pathogenic to rabbits and guinea-pigs.

The germ was first isolated by me from cases of dysenteric enteritis in Ceylon, and has recently been observed by Spagnolo, Russo, Taylor, Douglas, Peruzzi, and Ghiron, in Europe.

The germ is found in great abundance in a number of cases of dysentery, while it seems to be rare in other conditions; it is very doubtful, however, whether it can really become pathogenic, as I found it also in cases in which the typical Shiga-Kruse bacillus was present. It may, perhaps, be considered to be a so-called "noso-

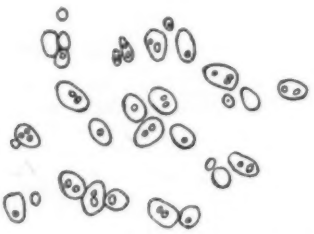

Fig. 2—Monilia tropicalis from a culture.

parasite" similarly to what is the case with certain species of proteus found in cholera, in typhus fever and other conditions.

An organism very similar to Vibriothrix zeylanica has been found in cases of granular mycosis of the tonsils.

GRANULAR MYCOSIS OF THE CRYPTS.

The affection, which is not new, but which is little known, runs a chronic course and is not painful. The patient often does not come to consult the doctor because of a sore throat, but because of the unpleasant odor of the breath. On examining the throat small whitish-yellowish spots will be seen on the tonsils; these spots are in reality the surface portion of the granules contained in the crypts, and may be extracted with more or less ease. These bodies when crushed emit a very offensive odor; under the microscope they are seen to consist of masses of nocardia-like organisms, at other times of masses of leptothrix and vibriothrix; in certain cases both nocardial fungi and leptothrix are seen as well as various bacteria, and even protozoa such as spirochaetes amoebae and flagellates. The Nocardia fungi present are very difficult to grow. After several years the masses in the crypts may become calcified, and real calculi may be formed, which sometimes form the starting point of some very severe inflammation.

Illustrative Case (London)—Mrs. N., European, aged 28, married, very good general health, does not complain of sore throat, but is greatly distressed, suffering from severe foetor oris, which is apparently the cause of some estrangement with her husband. On the surface of the tonsils several whitish-yellowish spots are seen. On further examination one finds out that they are small nodules easily removed from the crypts. The microscopical examination shows masses of a filamentous fungus. Attempts at cultivating it failed. All the nodules were extracted and applications of glycerine of borax ordered. The result was very satisfactory.

TONSILLO-ACTINOMYCOSIS.

Primary actinomycosis (nocardiasis, cohnistreptothricosis) of the tonsils is rare. Most of the cases are of the yellow or white type; generally only one tonsil is affected. The tonsil is much enlarged and contains one or several small abscesses which on bursting discharge pus containing the typical yellow or white granules due to fungi of the genus Nocardia and Cohnistreptothrix. In the tropics, I observed a case with black granules due to Nocardia nigra. Perry and Potter have recently thoroughly investigated a case of tonsillo-actinomycosis in England.

ACUTE AND SUB-ACUTE TONSILLOMYCOSES.

Acute and subacute tonsillomycoses are in my experience comparatively common.

The following is an aetiological classification of these conditions:

(1) Due to fungi of the genus Monilia, tonsillomoniliasis.

(2) Due to fungi of the genus Saccharomyces, tonsillo-saccharomycosis.

(3) Due to fungi of the genus Cryptococcus, tonsillocryptococcosis.

(4) Due to fungi of the genus Oidium, tonsillo-oidiosis.

(5) Due to fungi of the genus Willia, tonsillo-williasis.

(6) Due to fungi of the genus Hemispora, tonsillohemisporosis.

Without entering into too many botanical details, it may be of practical advantage to give briefly certain characters of the above genera.

Genus Monilia, Persoon, 1797—The original definition by Persoon is "Stipitata aut effusa byssoidea, fila moniliformis articulata," and Saccardo and other botanists state that these fungi are characterized by the sporophores being simple or sub-simple, and producing by construction at the extremities a chain of large lemon-shaped conidia, often provided with a disjunction apparatus. No asci and no ascospores are present. The general tendency at the present time, however, thanks to the work of Pinoy and Vuillemin, is to extend the term "Monilia" so as to include all those organisms of the family Oosporacea Saccardo, 1886, the vegetative body (thallus) of which in its parasitic life (in situ, in the lesions) appears as a mass of mycelial threads and free budding forms, some of the mycelial filaments being long and branched, and of rather large size, and often presenting arthrospores. In the saprophytic life (cultures on the usual solid laboratory media) mostly roundish or oval budding yeastlike cells are seen, while mycelial filaments are very scarce or absent, and when present they are rather short and consist only of a few short articles. Monilia fungi very often ferment glucose and other carbohydrates with production of gas. From a practical point of view these fungi are characterized principally by the following features: In their parasitic life in the human lesions the vegetable body (thallus) is composed of mycelial threads of rather large size showing arthrospores and numerous free, oval, or roundish budding yeast-like elements; in cultures, especially on solid media, mostly roundish or oval budding cells are seen, while mycelial filaments are scarce or absent. Asci and ascospores are absent.

It must be noted that not rarely, also in the lesions, only yeast-like forms are found.

The classification of the monilias has been the subject of much confusion. Morphological grounds do not suffice for a classification, but by means of their biochemical reactions a fairly satisfactory classification has now been reached. By means of the sugar reactons it is possible to divide the species of *Monilia* into groups: by the use of the followng carbohydrates: glucose, levulose, maltose, galactose, saccharose, lactose, inulin.

1. *Balcanica group*—Gas produced in *glucose* only. Principal species: *Monilia balcanica* Cast. *Monila parabalcanica* Cast.

2. *Krusei group*—Gas produced in *glucose* and *levulose.* Principal species: *Monilia krusei,* Cast. *Monilia parakrusei,* Cast. *Monilia castellanii Re.*

3. *Pinoyi group*—Gas produced in *glucose, levulose, maltose.* Principal species: *Monilia pinoyi* Cast. *Monilia nabarroi* Cast.

4. *Metalondinensis group*—Gas produced in *glucose, levulose, maltose,* and *galactose.* Principal species: *Monilia metalondinensis* Cast. *Monilia pseudometalondinensis* Cast.

5. *Tropicalis group*—Gas produced in *glucose, levulose, maltose, galactose* and *saccharose.* Principal species: *Monilia tropicalis* Cast. *Monilia metat· 'calis* Cast.

6. *Guillermondi group*—Gas produced in *glucose, levulose, saccharose* and *raffinose.* Principal species: *Monilia guillermondi* Cast. *Monilia pseudoguillermondi* Cast.

7. *Macedoniensis group*—Gas produced in *glucose, levulose, galactose, saccharose* and *inulin.* Principal species: *Monilia macedoniensis* Cast. *Monilia macedoniensoides* Cast. *Monilia chalmersi,* Cast.

8. *Pseudotropicalis group*—Gas produced in *lactose,* and other *carbohydrates.* Principal species: *Monilia pseudotropicalis* Cast.

9. *Pseudolondinensis group*—Gas produced in *dextrin* in addition to other carbohydrates. Principal species: *Monilia pseudolondinensis* Cast. *Monilia pseudolondinoides,* Cast. *Monilia africana* Macfie.

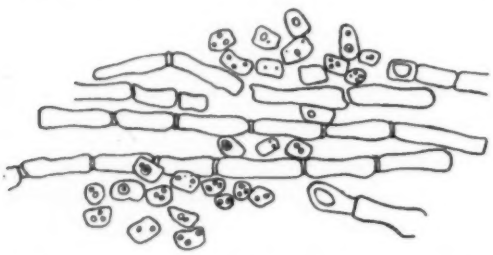

Fig. 3—Oidium asteroides: from glucose-agar culture.

10. *Zeylanica group*—No gas produced in any sugar. Principal species: *Monilia zeylanica* Cast. *Monilia zeylanoides* Cast. *Monilia macroglossiæ* Cast.

It is important to note that some monilias after a few transplantations lose some of their fermentative characters or these may become altered. Hence in certain cases the determination of species is possible only when using recently isolated strains.

Genus Saccharomyces, Meyen—The characters of these fungi are identical with those of the genus Monilia, except that asci and ascospores are present in old cultures.

Genus Oidium, Link (sensu stricto)—This genus is morpho-logically closely allied to Monilia, but mycelial threads are much more abundant both in the lesions and in the cultures, and budding yeast-like cells are rare. Fungi of this genus may occasionally induce acide fermentation, but never produce gas. There is no doubt that that original trush fungus, Odium albicans Robin, 1895, is not an Oidium but a Monilia.

Genus Willia Hansen, 1904—Saccharomycetaceae with acospores of a peculiar bowler-hat like shape. Fungi of this genus as a rule do not cause alcoholic fermentation, but often produce various ethers, the cultures often presenting a pleasant fruity odor.

Genus Hemispora, Vuillemin—The mycelium is very abundant. Some mycelial hyphae becomes differentiated, forming terminal ampulliform structures called "protoconidia." The protoconidium after a time divides into several segments called "deuteroconidia," which are the true reproduction spores.

TONSILLOMONILIASIS.

The onset is generally abrupt with general malaise, fever, and difficulty in swallowing. On inspection of the throat, in most cases, the tonsils are seen to be covered with creamy-white patches which at times extend to the soft palate, the pharynx and the larynx. Diphtheria if often suspected, but the microscopical and cultural examination of the patches clears up the diagnosis. In other cases the clinical appearance is that of follicular tonsillitis. The prognosis is generally favorable, but not always. In a case in Ceylon the fungal infection spread to the bronchi and lungs and a severe mycotic bronchopneumonia developed. The treatment consists in local applications of glycerine of borax, and, most efficacious, a carbolic or a chlorine spray. Small doses of phenazone or aspirin may be given internally.

Illustrative Cases: Case 1—On August 5, 1921, Pensioner N. (Ministry of Pensions Hospital, Orpington) reported himself to the medical officer in charge, suf-

TABLE I—SHOWQING CHARACTERS OF VARIOUS MONILIAS

	Glucose	Levulose	Maltose	Galactose	Saccharose	Lactose	Mannite	Dulcite	Dextrin	Raffinose	Arabinose	Adonite	Inulin	Sorbite	Starch	Glycerine	Inosite	Salicin	Amygdalin	Insodulcite	Erythryte	Gelatine	Serum	Litmus Milk	Color of growth on glucose agar	Remarks
Monilia zeylanica, Castellani	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	Yellowish	
Monilia zeylanoides, Castellani	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	Produces no discoloration of lead agar.
Monilia (cryptococcus) macroglossiae, Castellani	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	Produces black discoloration of lead agar.
Monilia balcanica, Castellani	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia parabalcanica, Castellani	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia krusei, Castellani	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia parakrusei, Castellani	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia (cryptococcus) Castellani, Re	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	Yellowish or brownish	
Monilia pinoyi, Castellani	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia nabarroi, Castellani	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia metalondinensis, Castellani	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia pseudolondimensis, Castellani	G	G	G	G	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia alba Castellani	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia pseudolondinoides, Castellani	G	G	G	G	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia africana, Macfie, 1921	G	G	G	O	G	O	O	O	G	G	O	–	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia albicans, Robin	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	+	+S	O	White	
Monilia tropicalis, Castellani	G	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia metatropicalis, Castellani	G	G	G	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia rhoi, Castellani	G	G	O	G	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia guillermondi, Castellani	G	G	O	O	G	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia pseudoguillermondi, Castellani	G	G	O	O	G	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia macedoniensis, Castellani	G	G	O	G	G	O	O	O	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	C	White	
Monilia macedoniensoides, Castellani	G	G	O	G	G	O	O	O	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	O	White	
Monilia chalmersi, Castellani	G	G	O	G	G	O	O	O	O	O	O	O	G	O	O	O	O	O	O	O	O	O	O	O	Dark Brown	

C—Clot; G—Gas; S—slight; O—negative result, viz., non-production of gas in sugar media, or of clot in milk, or of liquefaction in serum and gelatine; +—positive result.

fering with tonsillitis with temperature 102° F., rapid pulse and prostration. On the tonsils and fauces there was a white, membrane. Neither in the direct smear nor on the culture were diphtheria bacilli found. In the direct smear, made at the bedside, were a large number of Monilia. From cultures on Loffler's medium and glucose-agar, Monilia was grown at 37° C., and isolated in pure culture. The patient made a good recovery after the exhibition of a chlorine gargle.

Biological Reaction—The Monilia isolated gave the following reaction: (1) Glucose: Acid and Gas (2) levulose: A and G; (3) maltose: A and G: (4) galactose: A and G; (5) saccharose: nil; (6) lactose: nil; (7) inulin: nil; (8) litmus milk: nil.

The Monilia biologically corresponds to Monilia metalondinensis (Castellani, 1916).

Intravenous inoculation of isolated Monilia. An emulsion of the Monilia was made from a glucose agar slope and 1 c.c. of a white opaque emulsion was injected by Dr. Mackenzie Douglas, pathologist to the Hospital into an ear vein of a rabbit. In five days' time the animal died and cultures of the Monilia were obtained from the heart blood, lungs, liver, spleen and kidney.

Naked-eye appearance of the organs: In the lungs there were areas of congestion but there was no pneumonia. Both kidneys were greatly enlarged. The capsules stripped readily and showed the surface white and granular. On section the cortex was whitish. This was due to white specks, none larger than a pin's head, closely set together. There were a few discrete specks in the medulla which otherwise showed little change to the naked eye. There was no change of note to the naked eye in other of the organs.

Microscopical appearance of the kidney: Microscopic sections showed the Monilia scattered throughout the substance of the kidney, but mostly in the cortex. A few lay singly but for the most part they were small groups and surrounded by small round cells. The glomeruli were not greatly affected. The convoluted and other tubules were distinctly degenerated and many of them crushed owing to the presence of groups of Monilia. The collecting tubules were less affected, but in their lumen were many red blood corpusles and small white cells. The interstitial tissue was not increased. Between the tubules, however, especially in the medulla, there was a considerable amount of homogenous matrix, staining pink with eosin. In the medulla the groups of Monilia were confined mainly to the periphery. In the clusters there was no caseation, no increase of fibrous tissue and there were no giant cells present.

The organism isolated from the heart blood of this rabbit was injected in a similar manner into another, and in the same manner the second rabbit died in five days. At the autopsy the naked-eye appearances of the organs were in every way identical with those described above, as were also the miscropic pictures of the kidneys. The same Monilia was isolated from its heart blood and from the organs.

Case 2.—Cingalese girl, aged about 11, admitted to the Infectious Disease Hospital of Colombo in 1910 with the diagnosis of diphtheria. There were white patches on the tonsils, vulva and soft palate. The temperature was rather high (102° F.); the pulse frequent and of low pressure. There was swelling at the angle of the jaw. The child developed symptoms of bronchopneumonia and died three days after admission. Anti-diphtheria serum was given twice by the physician in charge of the hospital. The microscopical and bacteriological examination of the patches for the Kleb-Loffler bacillus, carried out with the usual technic, serum-media, etc., being used, remained negative. No bacteria of any kind were seen in the specimens directly taken from the patches, but numerous mycelial and conidial elements of a fungus were

present. On serum and glycerine agar media no colonies of diphtheria or other bacteria. The fungus had all the biochemical characters of Monilia tropicalis Cast.

Case 3.—A young European lady, aged 22, became suddenly ill with sore throat at one of the Colombo hotels. Her medical attendant suspected diphtheria, and called me to see her in consultation. When examined her temperature was 101°F., pulse 98; she complained of difficulty and pain in swallowing, both tonsils and vulva were covered with white creamy patches. Preparations made from the patches revealed an enormous number of yeast-like organisms and a few cocci, while no bacilli of any kind was present. This, of course, was sufficient to exclude diphtheria. On glu-

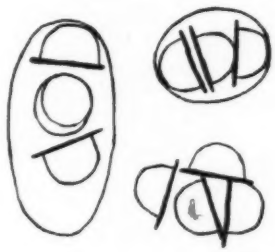

Fig. 4—Willia ascospores.

cose agar tubes a fungus grew in pure culture with all the character of a Monilia. This monilia rendered milk slightly acid, and then decolorized it completely; it did not liquefy serum or gelatine. On serum it induced a narrow zone of black discoloration all round the growth.

Case 4.—A young gentleman attached to one of the Embassies in London. Abrupt onset, fever, severe pain in swallowing, creamy white patches developing very rapidly on the tonsils, uvula and soft palate. The practitioner in charge was in doubt whether it was diphtheria or Plaut-Vincent's angina, and called me in consultation. Smears showed absence of spirochaetes and bacilli; instead a very large number of yeast-like cells were present. The cultural examination showed absence of the diphtheria bacillus; instead a monilia was grown with all characteristics of a Monilia metalondinensis.

TONSILLO-OIDIOSIS.

The clinical symptoms are identical with those observed in tonsillo-moniliasis. The oidia so far found in these cases are Oidium matalense Castellani and Oidium rotundatum Castellani.

Illustrative Cases. Case 1.—European, aged 25, has been several years in Ceylon. In November, 1914, was taken ill with severe sore throat, difficulty in swallowing, and high fever (104°F.). When seen by me twelve hours after onset, both tonsils were covered with a diffuse white exudation, but not the uvula. The microscopical examination and bacteriological examination showed absence of the diphtheria bacillus, while a fungus was grown with the botanical characters of an oidium. Further investigation showed it to be very similar to O. matalense.

Case 2.—A young English planter, while in a nursing home in London November, last, where he was treated for chronic malaria, complained suddenly one morning of sore throat with difficulty in swallowing; temperature 101° F. The examination of the throat showed the typical picture of an ordinary follicular tonsillitis. The miscroscopical and cultural examinations, however, showed presence of an oidium: orotundatum.

TONSILLO-WILLIASIS.

The clinical symptoms are identical with those of tonsillo-moniliasis.

Illustrative Case.—An Indian girl, aged 14, in England for her education got suddenly ill at the end of October, 1922, with high fever, severe sore throat and difficulty in swallowing. When I saw her both tonsils and the uvula were covered with creamy white patches. Microscopically no bacilli of any kind were present; instead

numerous fungoid elements and a few cocci could be seen.

A cultural investigation was carried out; it was negative for Bacillus diphtheria. A fungus was grown with the general characters of the genus Willia. A determination of species was not attempted.

The patient got rapidly well on a treatment consisting of a local spray of 1 per cent. carbolic acid, painting with glycerine of borax, and internally a sodium calicylate mixture.

TONSILLO-HEMISFOROSIS.

The clinical symptoms are somewhat different from tonsillo moniliasis. The onset is acute, but the general and local symptoms do not disappear so rapidly, the patches are not creamy, they are often greyish or greyish brown, or greyish-yellowish, and are very resistant to treatment. The fungus found is a Hemispora, usually Hemispora rugosa Cast.

Case 1.—European planter, admitted to the Kandy Hospital on May 2, 1913. The illness had started two weeks previously. Temperature on admission 101° F. Complained of severe pains in throat and difficulty in swallowing. Flushed face; felt extremely weak and exhausted. Voice thick and nasal. Swallowing painful and difficult. Fluid regurgitated through nostrils. There was a profuse flow of saliva. The muscles of the neck were rigid, submaxillary glands enlarged and painful. The patient was unable to open the mouth wide. Tongue thickly coated and dry; soft palate swollen. Greyish membranes were present on the left tonsil, left anterior pillar and soft palate. Diphtheria antitoxin (2,000 units) was injected the same day by the attending physician into the flank and spray of hydr. perox. prescribed. During the next four days the general condition improved, but the whitish-greyish membranes in the cleft between the left tonsil and the left anterior pillar were still very evident. Nine days after admission there was still a small whitish patch visible, but the patient felt quite well and was discharged the following day. In smears made from swabs sent to me for examination no bacilli were seen, a few cocci were present, and numerous large mycelial segments of a fungus. Serum tubes and glycerine agar were inoculated as usual, and gave the presence of mycelial threads; also several sugar agars. The serum and glycerine agar tubes did not show any growth of the diphtheria bacillus; instead there was a growth of a fungus with a peculiar crinkled surface which I had found previously, in 1909, in a case of bronchitis. Being uncertain of its classification, I placed it temporarily in the genus Monilia, and called

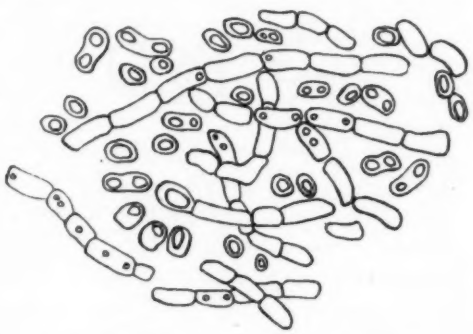

Fig. 5—Oidium rotundatum from a culture.

Monilia rugosa. It was later sent to Professor Pinoy, of the Pasteur Institute, who, after a long botanical investigation, came to the conclusion that the organism belonged to the genus Hemispora. The correct name of the fungus became therefore Hemispora rugosa Castellani.

Case 2.—Mrs. N. B. came to consult me in September, 1921. She was complaining of sore throat which had begun three weeks ago and she had been treated with various gargles. There was a large greyish-yelloiwsh patch on the right tonsil. The microscopical and cultural examination revealed the presence of hemispora. The local condition healed after repeated applications of iodine. It is interesting to note that soon

after, she developed signs of bronchitis and the same fungus was found in the sputum.

Case 3.—A young English lady, married, came to consult me in London in May 1925. A few months previously while in the East she had a severe sore throat which the local practitioners thought might be diphtheria, but no serum was given. After the acute symptoms disappeared, a greyish-whitish patch remained on the right tonsil. This was still present when the lady came to consult me, and I isolated from the patch hemispora rugosa.

A very interesting feature of the case was the following: When she came to see me, she complained of severe discomfort and discharge from the vulva. An examination of her genital organs revealed a greyish-brownish patch on the inner surface of the right labium somewhat similar to that present on the tonsil. From the patch the same fungus (H. rugosa) was grown. Local application of diluted tincture of iodine cured the condition.

RESUME AND CONCLUSION.

Tonsillomycoses or affections of the tonsils due to fungi higher than bacteria (mycetes) are not, in my experience, very rare. I have seen cases in tropical and subtropical countries and also on the continent of Europe and in England. They may be caused by a variety of fungi, mostly fungi of the genera Monilia, Oidium, Hemispora, Nocardia. They may be clinically separated into two groups: chronic contillomycoses, acute tonsillomycoses. Chronic tonsillomycoses have been known and studied for many years, but the subject of acute tonsillomycoses has not so far received much attention in medical literature. The subject is, however, important from a practical point of view, as acute tonsillomycoses may at times clinically simulate diphtheria, Plaut-Vincent's angina and follicular tonsillitis.

LITERATURE.

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THREE CASES OF GAS-BACILLUS INFECTION.*

WITH LABORATORY TECHNIQUE.

A. A. HEROLD, M. D.,
SHREVEPORT, LA.

It is not my purpose in this paper to deal, in detail, with the treatment of this dangerous infection, but merely to report three cases, which came under my observation, in the North Louisiana Sanitarium, although in the surgical services of others, in a comparatively short space of time. The three cases were under the care of three different surgeons, were given first aid by three different local practitioners and, although two hailed from the same parish, they really came from different localities. All three evidently had the infection before arrival at Shreveport, as amputations became necessary on the 1st, 3d and 4th days, respectively, with well marked clinical signs in each case.

The first case, J. W. S., hailing from the Parish of Lincoln, was admitted Dec. 23, 1924, with a history of having sustained a fracture and extensive lacerations of musculature of leg, by getting it caught in a large belt in mill machinery. The parts had been cleansed as well as possible by the mill physician, who hurried him over to our hospital; upon his arrival the same day, the surgeon deemed it safe and wise to attempt to save the limb—judgment which would have been fully justified had not this virulent infection made itself plainly evident at the first change of dressings through a window in the plaster-of-Paris cast. After consultation, an amputation was performed high up on thigh, the wound being left entirely open and treated along modern approved methods. The following laboratory details were carried out, viz.:

Dec. 26. Culture showed positive for gas bacillus of Welch; on litmus-milk or "brom-cresol purple," a typical yellow stormy coagulation appeared; on 30th, a small rabbit was inoculated, from the whey; killed in 15 minutes, and incubated for 6 hours, a bubble was found in liver; incubation of cultures from heart and liver for 24 hours, showed positive for the Welch bacillus. On Jan. 1, patient developed a lesion on other leg, cultures from which revealed streptococcus viridans. In spite of the open treatment, thorough

*Read before the Louisiana State Medical Society, New Orleans, April 21-23, 1925.

drainage, the use of stimulants, two blood transfusions and special care, the patient succumbed on Jan. 14th, due, we thought, to showers of septic emboli, as he had presented symptoms of involvement of both lungs, at separate times, and blood cultures showed streptococcus viridans.

The second case, T. W., came from Red River Parish, having sustained a compound fracture of both bones of leg by being run down by an automobile on Jan. 27th. An attempt was made to save the limb by thorough cleansing, approximation of lacerated parts and the free use of Carrel-Dakin's solution. On the 29th, due to suspicious local signs, cultures were taken and reported positive for gas bacillus of Welch, as well as presence of streptococci and staphylococci. The same typical stormy coagulation was again noted. Amputation at lower third of thigh was performed and wound treated by open method. Although convalescence was rather tedious and a reamputation of protruding bone became necessary, after all infection had subsided, the patient left the hospital in good condition on March 7th.

The other case, P. E., also from Red River Parish, but from a different locality than previous case, was admitted with a compound fracture of forearm on Jan. 11th, 1925, with a history of having sustained a shotgun wound the day previous. Emergency aid was rendered by local physician and he was hurried in to us. This case is reported last of the three, as no bacteriological work was requested, but the diagnosis made in a rather unique way, viz: by the X-ray film, which I herewith present. It was our intention to apologize for this and to state that I would not urge dependence on it, in doubtful cases, until my attention was called to the article in Journal of A. M. A., 1919, 72:407, wherein Dr. Frederick Christopher, U. S. Army, writing from France on "The Early Diagnosis of Gas Gangrene," says that this is a helpful means of arriving at an early diagnosis. He says that Morgan and Vilvandre have demonstrated the presence of gas that was entirely unsuspected until the X-rays revealed it during routine examinations for pieces of metal or fractures. The X-ray appearance of the gas is usually that of: (1) Bubbles in strings; (2) broad cast; (3) in a layer under the skin; (4) with a cloud-like outline to the shadows; or, (5) as a striation.

This case is unusually interesting, because of the fact that he not only got over the gas bacillus infection, by an early amputation and open treatment, but, through a misunderstanding, the routine administration of prophylactic antitetanic serum was neglected and he developed a marked case of tetanus, from which he also recovered, through the heroic use of the serum. He returned later for re-amputation of the protruding bone and now has a satisfactory stump.

These three cases, admitted into a private general hospital, in a period of five weeks, are interesting in view of the statement by Barney and Heller in Archives of Sugery (4:170-84, 1922) that "occurrence in civil life is very uncommon, only 175 cases reported to 1915"; I might add that we had none before these three and have had none since.

Numerous strains of gas-producing organisms have been reported, varying from four to fifteen, according to different authors. At least four different specific sera have been used, some being monovalent and others polyvalent; in this connection, Lawrence and Niehaus, writing in the Medical Times (1919, 47:274), advise the early use, in suspected cases, of the polyvalent serum of Leclainche and Vallee; this to be followed by a culture and report to determine the further treatment—very much as we do when suspicious of diphtheria. However, as stated above, it is not our intention to go into the treatment of this infection, which is more in the province of the surgeon; but, we hope, by this short paper, to cause all to be on the lookout for this virulent condition, have early laboratory investigation and be prepared to institute thorough treatment before it is too late.

(For the details of laboratory technique, mentioned above, we are indebted to Mrs. E. Lengsfield, Technician, North La. Sanitarium, Shreveport.)

DISCUSSION.

Dr. C. W. Duval (New Orleans): I think this group of spore-bearing anaerobes is responsible for more pathological conditions than we have realized in the past. Post-traumal tissue invasion is, of course, the more common role seen for B. aerogenes capsulatus; however, as a terminal invader of the tissues it is far more frequent, so often occupying the clinical field at death. Here it should be mentioned that B. aerogenes and other members of this group are constantly passing through the alimentary tract, and are even regarded by some authorities as one of the

normal intestinal flora. This would explain the organism's secondary and terminal role in other infections. B. aerogenes septecemia is not an uncommon condition following trauma and primary infections of the pelvic organs, more especially the uterus. I have seen a number of puerpural sepsis cases in which the B. Welchii played the prominent role. Dr. Herold has pointed out the danger of septicemia from aerogenes infected wounds, all of which goes to show that we must not consider too lightly the pathogenic role played by members of this important group of anaerobes.

Dr. A. A. Herold (closing): I appreciate Dr. Duval's discussion and I quite agree as to the great prevalence of the anaerobic organisms referred to, especially in the gastro-intestinal tract.

In conversation, recently, at home, I was told of a case of gas bacillus infection of the kidney, the patient recovering. The diagnosis, in this instance, was confirmed by careful laboratory technique.

OBSERVATIONS ON THE DIAGNOSIS OF DISEASES OF THE PANCREAS.*

J. H. MUSSER, M. D.,

NEW ORLEANS.

The diagnosis of pancreatic disease is attained with considerable difficulty owing to the depth of the organ within the abdomen. Because of this and because of the failure of the pathologist to study carefully the gland at autopsy, the statistics of the frequency of pancreatic disease as contrasted with disease in other organs are very misleading. Pancreatic disease occurs with much greater frequency than clinical and autopsy records would lead one to believe. It is the failure of the clinician and the pathologist to recognize the lesion that results in such a few cases of pancreatic disease being recorded, whereas the organ is in reality fairly frequently diseased.

Before touching upon the diagnosis of pancreatic disorders more in detail, I should like to mention two factors in the anatomy and physiology of the pancreas that are of importance in diagnosise and that are not generally known. In the first place, the duct of Wirsung is usually considered the only duct of importance for the discharge of the external secretion of the pancreas. However, in a goodly number of cases Opie has shown that the large tributary duct, the duct of Santorini, may be the main excretory channel of the gland. In the second place, for many years it has been taught, following the teaching of Bayliss and Starling, that secretion from the pancreas was largely controlled by secretin, a product of the duodenal mucus membrane. Recently McClure (1) has shown that food stimulates the flow of pancreatic juice so that there is very distinct variation in the enzymic concentration of the several enzymes after the ingestion of either protein, carbohydrate or fat. Even more positive and direct are the studies of Silverman and Denis (2) upon an individual with a duodenal fistula. They found that the ingestion of egg albumen provoked the most notable increase in the concentration of the pancreatic enzymes.

GALL-BLADDER AND PANCREATIC DISEASE.

It is advisable to emphasize how closely related are gall-bladder and pancreatic disease. There are two theories as to the genesis of acute pancreatitis. The one theory explains the mechanism of the production of the disorder on the influx of bile into the pancreatic duct when a small calculus in the ampulla of Vater acts as a ball-valve, turning the bile into the duct by occlusion of the opening of the papilla into the duodenum. The other theory forcibly and scientifically advanced by Sweet is that acute hemorrhagic pancreatitis develops as a result of extension of the inflammation from infected biliary passages to the pancreas through the lymphatics. No matter which theory holds true, one of the most outstanding pancreatic disorders is usually the direct result of liver and bile duct disease.

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*Read before the Louisiana State Medical Society, New Orleans, April 21-23, 1925.

1. Am. Jour. Med. Sci., 1924, 167, 649.
2. Arch. Int. Med., 1925, 35, 357.

In chronic pancreatitis it is nowadays very generally held that the etiological factor is in the majority of cases directly related to disease of the gall-bladder and ducts. For example, Mayo says that 81 per cent of the cases of chronic pancreatitis are associated with disease of the gall-bladder and its tributaries. Looking at the question from a different point of view, Piersol and Bockus (3) use the fact they have recently shown to be true, that there is a marked reduction in the amount of pancreatic enzymes in cholecystitis, as further corroborative diagnostic evidence of the presence of this latter disorder.

The gall-bladder is also incriminated in diabetes, a disorder of the islands of Langerhans, of as yet unknown pathogenesis. Eustic (4) recently reported 36 cases of so-called alimentary glycosuria, 15 of whom showed evidences of cholelithiasis and of these, six subsequently developed symptoms of diabetes mellitus. More recently Jones et al. (5) have stated definitely that they believe that cholelithiasis is one of the most important etiological factors in diabetes mellitus. Joslin has long been of such an opinion. It can thus be seen from this brief survey that the gall-bladder and bile ducts are responsible in a large number of cases for the production of the acute and chronic inflammatory lesions which are the most prevalent of pancreatic affections. Diabetes, a disease which is usually classified as a disorder of metabilism, has as its outstanding histo-pathological lesion changes in the cells of the islands of Langerhans. The responsibility for these lesions rests in a goodly number of instances upon pre-existing gall stones.

In discussing the three most prevalent diseases of the pancreas, namely acute hemorrhagic pancreatitis, chronic pancreatitis, and carcinoma, I will not attempt to detail the history, laboratory and physical examinations, but will merely attempt to offer a few suggestions in the diagnosis which I believe to be of value and to touch upon a few discrepancies in the ordinary teachings.

Acute pancreatitis of the hemorrhagic type is a condition that is met with from time to time and rarely diagnosed. The classical picture is that of an acute overwhelming fulminating abdominal catastrophe, yet probably 50 per cent of the cases do not represent such a picture. Just as frequent, if not more frequent, are the cases of mild pancreatic necrosis in which rapid recovery is the rule. Substantiation of this statement may be seen in the frequency with which patients with acute severe attacks of pancreatitis give a history of previous similar mild attacks, usually diagnosed as gall stone colic, and with which patients operated upon for presumed cholelithiasis are found to be free of gall-bladder disease. Pain is a symptom of great value, undoubtedly, and this pain is of such severity that morphin will fail to control it and yet, despite this, pain of great severity or pain of any degree is frequently wanting. Waring and Griffiths (6) in an analysis of 16 cases, found it present in only a little over half (56.2 per cent). The examination of the patient yields some information which is of value if properly interpreted. In the first place, there is usually marked tenderness in the epigastrium just above the navel and if palpation is performed carefully with the finger tips, this tenderness is found to run transversely across the upper abdomen equally on both sides of the midline. Secondly, the absence of pronounced rigidity is a negative sign of value. There does not exist the pronounced evidence of peritoneal irritation that occurs in the usual acute inflammatory lesions within the abdomen, at least in the early stages of the trouble and even in the late stages it is not as severe as one would be led to suspect from the other symptoms. It

3. Arch. Int. Med., 1925, 35, 204.
4. New Orleans Med. and Surg., Jour., 1923, 75, 449.
5. Arch. Int. Med., 1925, 35, 315.
6. Brit. Jour. Surg., 1924, 11, 476.

is also to be noted if the patient is seen relatively early that a distinct sense of resistance may be felt on palpating deeply over the pancreas which later on may become an actual tumor mass, palpable if muscle spasm if not too tense.

The laboratory examinations are valuable in a measure. Glycosuria, if found, is at least suggestive in a patient known to be previously sugar free. Recently I have had the opportunity of seeing two cases of acute pancreatitis in whom the blood sugar was high. One of these patients never had a glycosuria during the time she was under observation, but in the other subsequently the amount of sugar in the blood passed the figures for the kidney threshold and sugar appeared in the urine. A high blood sugar might be a finding of value if looked for routinely in questionable cases in which the diagnosis might presumably be acute pancreatitis.

CHRONIC PANCREATITIS.

What has been previously said holds true in regard to the chronic form of pancreatitis: it is much more frequent than the unfrequent diagnosis of such a condition would indicate. This statement is made despite the fact that surgeons are wont to palpate a hard indurated pancreas at the time of operation for bile duct disease and say that chronic pancreatitis exists. Incidentally this diagnosis made at the operating table is frequently incorrect. Deaver regards the swelling of the head of the pancreas in these cases as being due to an inflammatory exudate which is rapidly absorbed when the primary cause in the bile passages is properly corrected. Whether the incidence of chronic pancreatitis is frequent or infrequent is more or less of an academic question. It is not possible to concede much practical importance to a chronically diseased pancreas in the production of symptoms which may require a physician's service. It is indeed a rare patient for whom it is necessary to order treatment directed towards the correction of pancreatic defects. This may be the result of our failure to recognize cases of pancreatic indigestion. If it is conceded that such cases are organic rather than functional in character, then most assuredly the condition is rare, or rarely develops with any severity, because it is extremely unusual to see either in clinic or ward an emaciated patient with the large, bulky, fatty stools of pancreatic disease, findings that develop late in the disease and which are so characteristic that they can certainly not be overlooked nor misdiagnosed. If early cases of chronic pancreatitis are overlooked, the blame should rest more on the profession as a whole rather than the individual practitioner because no method has been evolved which can be used satisfactorily, whether it be examination of the duodenal contents or the stool, or more elaborate functional tests, with a minimum amount of equipment and in a relatively short time, so that it is available for clinical use. Some years ago it was the custom to determine pancreatic activity by the examination of the stools. The presence of excessive fat and undigested meat fibres was considered to show insufficiency of the organ. More recently the methods of choice in the diagnosis of pancreatic disorders depends upon some modification of Einhorn's original methods of studying the duodenal contents, which permit of greater simplicity or else of greater accuracy, but in the latter case complicating the procedure even further. Only a short time ago Bassler (7) has brought out another modification which seems much simple rand much more adaptable to clinical procedures than any that have as yet appeared or have geen tried by me.

In the diagnosis of chronic pancreatitis, the history is of great importance, as it is in so many other chronic disorders, whether it be of the heart, the kidney or the lungs. Frequently it is only by careful questioning and evaluation of the subjective symptoms that one is able to secure a history, at no times typical, as is that of

7. Arch. Int. Med., 1925, 35, 162.

duodenal ulcer, which tells of occasional attacks of mild jaundice, with rather vague epigastric pain, located to the left of the midline and referred to the left scapular region, but without any relation to the ingestion of food. Obtaining a history of this character from an individual in whom it is impossible to demonstrate gall-duct involvement, it is reasonably safe to hazard the presumptive diagnosis of chronic pancreatic disease and when this is done to study the duodenal contents for the presence or absence of enzymes and their fluctuations, if it is possible to make a fractional analysis of the pancreatic enzymes. Even if the enzymes are found to be markedly depressed by the analytic method, it is impossible to say that definite pancreatic disease exists. There may be merely a functional disturbance of the pancreas secondary disease of the bile passages. However, no hard and fast line can be drawn between functional and organic disturbances. It is a problem difficult of solution to decide if a disturbance of function of an organ is due to organic disease of that organ, but it is at least playing a conservative role to say that the majority of functional disturbances demonstrated by various methods are due to organic disease of the viscus in question.

CANCER OF THE PANCREAS.

The greatest number of cases of cancer of the pancreas involve the head of the gland. The symptoms that arise are the result of pressure upon nearby structures by the neoplasm. Growth is in the direction of the bile ducts and consequently the most characteristic symptom of the disorder results, namely, severe, persistent, unabating jaundice. With this there frequently is associated pain as a result of pressure upon the solar plexus and at times digestive disturbance from pressure on the duct of Wirsung sufficient to exclude the external secretions of the organ from the intestines. Where the syndrome of jaundice and epigastric pain develops and a palpable gall-bladder is demonstrable, it is always wise to recommend exploratory operation, because a stone in the common duct produces exactly the same symptoms many times and there is no way in which the two conditionh can be absolutely differentiated. It is therefore advisable to tell the patient that in all probability operation will do very little for him but that there is a possibility that the symptoms may be caused by a stone which can be readly removed.

CONCLUSIONS.

Statistics as to the frequency of pancreatic dicease are misleading and do not represent the true incidence of lesions of this gland. Disease of the pancreas is rare, but not as rare as we are led to believe. The diagnosis of pancreatic disease is difficult and can be made only after tedious and laborious study of the patient's symptoms, a careful physical examination and the proper laboratory tests.

DISCUSSION.

Dr. Allan Eustis (New Orleans): There is no doubt that a diagnosis of pancreatitis is one of the most difficult we have to make. I am also firmly convinced that it is much more common than text books and most of the literature would lead us to believe. I am very glad to hear this paper, but I have little to say regarding acute pancreatitis except to emphasize what Dr. Musser has already said about its relationship to gall bladder disease, having seen two cases of acute hemorrhagic pancreatitis following acute septic gall bladder. It must be borne in mind that every gall bladder operation is a potential pancreatitis.

But when it comes to the chronic process, I would like to say a few words. The dominant symptom in chronic pancreatitis is the progressive loss of weight, which is due to poor digestion of all the food stuffs. Another symptom due to this lack of function is the enormous stools these cases have. They will come complaining of diarrhea, but a close examination of the stool will reveal not a diarrhea, but a soft, fatty stool, and the quantity of the stool in proportion to the food injected is considerably above normal. The normal individual on a Schmidt diet will pass a total dried residue from the rectum in 24 hours, of 54 grams, while the dried residue from an individual with absence of pancreatic secretion will weigh 354 grams, seven times as much. When a patient comes to you with diarrhea and you find there are large stools, you should immediately consider the possibility of chronic pancreatis.

Another symptom is stomatitis, the frequency of that struck me many years ago and I recall a report that Thomas Brown made in 1901, in which he called attention to the absence of pancreatic juices in sprue, while we recognize stomatitis as an almost constant symptom of sprue. I recall now one patient, who died, who came complaining of stomatitis and progressive loss of weight, with large stools. She was operated on with the hope that the gall bladder was back of it, and that probably, by draining the gall bladder, we might be able to arrest the pancreatitis. At operation the pancreas could scarcely be felt, at all, and was displaced by a narrow strip of tissue. This is one of three cases of pancreatitis that have been confirmed at operation, or autopsy, in which stomatitis was present, but is quite a frequent phenomena in clinical chronic pancreatitis.

DIAGNOSIS AND TREATMENT OF MAXILLARY SINUSITIS*

H. W. QUALLS, M. D.,
MEMPHIS, TENN.

After fourteen years of work and observation as a physician I am thoroughly convinced that sinusitis as a foci of infection has not received the attention it should have by the internist and men in general practice; especially is this true of the maxillary sinus.

The rhinologist has accumulated a very extensive literature around this subject, both in this country and in Europe. So many authors have contributed to it that there must be many who doubt whether anything really fresh or important remains to be said. Yet I hold to a firm belief, based upon experience, that no small part of what is written requires ruthless revision in the light of our modern methods of inquiry, conducted by our instruments of precision in the hands of one with a good knowledge of anatomy, its anamolies and abnormalities. The wealth of teaching in text books is too often impersonal and represents rather a legacy flowing from one's ancestors than a fortune newly won by hard endeavor. The heritage in respect to sinus disease is heavy enough, but not all the securities are worthy of their face value.

The maxillary sinus is present at birth as an out-growth of the middle meatus. At that time it is about the size of a small bean. Logan Turner says, "associated with the enlargement of the maxillary bone by the deposition of cancellous osseous tissue between its palatal and orbital surfaces there is a slowly progressive absorption of the same on the medial nasal aspect of the maxilla. In this way the sinus gradually increases in size extending outward into the body of the upper jaw and reaching its maximum dimensions about the twenty-fifth year, after the eruption of the last permanent molar tooth." The antrum develops rapidly and is about half its normal size at seven and one half years. It may become infected very early in life. I have seen pus evacuated from it between the third and fourth years. The floor of the antrum is relatively high in early life, as it barely reaches the attachment of the inferior turbinate. However, even at birth we can open and drain this sinus, if we slightly elevate the point of the instrument and keep close under the attachment of the inferior turbinate. I will not tire you with a review of the anatomy of this sinus, but wish to state that, after a study of four hundred wet specimens with Hirsch of Vienna, I am thoroughly convinced that no cavity in the human body is subject to so many anomalies and abnormalities. We found however, in each case that it would have been easy to enter the antrum close up under the inferior turbinate about the junction of its anterior and middle third.

The lining mucous membrane of the maxilllary like other accessory sinuses, is composed of ciliated epithelium, the motion wave of the cilia being always directed toward the ostium of the sinus and therefore, under normal conditions it is capable of self drainage. However, one can readily understand how this sinus with its normal ostium always a little

*Read before the North Mississippi Six Counties Medical Society.

higher than its floor, when in the upright position, will empty itself better while the patient is lying down or the head inclined to the opposite side. This accounts for the fact that often with infection of the sinus we do not find pus in the middle meatus at early morning examinations, but will often find it in the afternoon after the patient has been several hours in an upright position.

We know that under normal conditions we find menageries of germs in the mouth, about the teeth and in the tonsils, but this is not true with the sinuses. Torne has demonstrated that the healthy sinuses of cadavers, which had not been dead over two hours were, without exception sterile. He also has proven after extensive work that the normal secretion of the sinuses possesses a strong bacteridal power. We can see from the above that we have two very good reasons for the normal sinus being sterile. First, by the action of the cilia of the mucosa, which continually waves toward the sinus ostium; second, by the secretion of the glands situated in the mucosa, which possess a decided inhibitory power to the further growth of the invading germs. Both of these conditions must be overcome before infection of the sinuses can occur. I think that sinus infection is the result of direct bacterial invasion, but I doubt if it ever happens, unless due to infection about the teeth, until the vitality of the mucous membrane is first lowered by some general systemic disease. A careful history will nearly always bear out the above statement. A large number of organisms are responsible for antrum infection. Most cases follow influenza, "cold" in the head, or abscessed teeth. It was formally thought that every case of antral empyema was directly due to dental infection. Now we know that only twenty per cent of this disease comes from infected teeth. I have just stated that about eighty per cent of antral diseases come as a complication of some systemic disease. Now I want to state that infected antrums from any source are a foci of infection for many systemic diseases or symptoms of systemic diseases. The complications and sequellae of this disease may affect almost every organ and tissue in the body. In the respirtatory system the most frequent infections are bronchitis and asthma. The purulent type of sinusitis is often responsible for bronchitis and in asthmatics we more often find the non-suppurative or hyperplastic type. These patients are treated for abdominal trouble, due to gastric disturbances associated with this disease. It is often the focus of infection for "rheumatism" with its complications of cardiac and kidney disease. Skillern in a recent article, said, "Slight but persistent rise in temperature; unnatural stiffness in muscles and joints; vague gastric disturbances; nervous and mental phenomena; flushing of the face and head and cardiac irregularity; skin infections; inanition; loss of appetite and weight and sudden feelings of weakess with general perspiration; it requires careful and painstaking examinations positively to exclude sinus infection."

A diagnosis of this disease would more often be made if we always had the classical symptoms of 'cold in the head'; neuralgic pain in the region of the antrum and tenderness on pressure as is often found in acute infections of the sinus. However, we must remember that such symptoms are suggestive of periostitis, tertiary syphilis or a malignant growth of the antrum.

The proper examination in the chair with a good head mirror, together with a good transilluminating outfit in a dark room will nearly always make a diagnosis of this disease. If one has any doubt about it, this can be settled by the proper use of the needle and syringe. The x-ray is a valuable adjunct in diagnosis of sinus disease, but not necessary for diagnosis of disease of the maxillary sinus. Owing to the close anatomical relations of the different ostia of the anterior group, the maxillary, anterior ethmoidal and frontal sinuses, all of

which communicate with the middle meatus, it is necessary to make a very careful rhinoscopic examination to be of any value. It is always necessary to use some shrinking solution for a careful examination of the nose. I prefer a spray of one half per cent cocain solution. This I find does the work well without the toxic effect we are so liable to get from three per cent to five per cent solutions recommended by text books. I like it better than adrenalin, because we do not get the swollen, turgescent after-effect that we get a short time after the use of adrenalin. In two or three minutes after the spray the nose is ready for examination. If we look in the nose and find pus far back at a low level in the middle meatus we suspect the maxillary sinus. If the pus is carefully removed by a pledget of cotton or an applicator, or if we do not find any, then have the patient bend the head well forward with the suspected cheek turned uppermost and maintain this position for at least four or five minutes. If we find pus in the middle meatus after this posture, either by anterior or posterior rhinoscopy, we can say the patient has disease of the antrum. With infection of the maxillary sinus posterior rhinoscopy does not show pus high up in the middle meatus as we expect to find it with frontal and anterior ethmoid disease.

TRANSILLUMINATION TESTS.

I consider a good dark room and a Cameron light a valuable diagnostic aid in this work. If the patient has a dental plate be sure it is removed. Place the light in the mouth and have the patient close the lips firmly around it. The crescentic illuminated zone in the region of the lower eye lids is of more diagnostic value than the light showing through the cheek above the antrum. We should see this crescent above the lower lids in every case if both maxillary sinuses are negative. If a small rubber tube is placed over this light, excluding the rays except at the end, which is placed over the antrum while the patient's mouth is open we get a good transillumination in the mouth. if the sinus is negative. I am inclined to think the latter method a more reliable test. If there be any doubt about the diagnosis, place a small pledget of cotton, saturated with a five per cent solution of cocain close up under the anterior end of the inferior turbinate and one over the top of same. After ten minutes mop parts with fifty per cent alcohol. With a large needle three inches long, that will fit a Luer syringe, go into the antrum, making the puncture close up under the inferior turbinate; quickly inject four or five c.c. of sterile distilled water in the antrum and then suck back, so that a sample of contents may be obtained. In this way we not only determine whether or not we have an infection of the antrum, but by laboratory reports we can know the type of infection the patient has.

TREATMENT.

I do not think we should ever attempt to diagnose or treat diseases of the antrum by needle puncture and large irrigation. This is a painful, dangerous procedure from which several deaths have been reported. With a cavity full of pus and a normal ostium at a higher level than the needle puncture, how in this manner can we hope properly to clean and drain it. Too, what surgeon do you know who would expect an abscess to get better filled with any of the many solutions used in irrigating a maxillary antrum? Text books tell us to puncture and irrigate daily for two or three weeks then if they are not better to operate. I want to say as a rule they will not be better; however, some of them will improve, not because of the treatment, but in spite of it. If we expect these cases to get well promptly, they must be operated on promptly, giving the sinus good ventilation and drainage. Good drainage is certainly just as necessary here as for an abscess at any other place in the body. I seldom advocate or think it is necessary to do a Caldwell-Luck, Denker or the Cowper operation for a cure of this

disease. They are all easy, but look somewhat like a radical procedure for the surgeon and to my mind they certainly are a radical and often unnecessary procedure for the patient. Some of the un-toward sequellae of the Caldwell-Luck and Denker operations are devitalized teeth, anaesthesia of cheek, neuralgia in the infra-orbital region, stenosis of tear-duct with epiphora and osteomyelitis of the superior maxillary.

Objections to the Cowper operation: First, often we have to sacrifice a tooth for this operation; second, many cases have very thick cancellated bone between the apex of tooth root and the sinus floor; third, the direct communication of the sinus with the mouth, through the process of mastication, gives a chance for reinfection at any time.

Good aeration and drainage will cure ninety per cent of maxillary sinus disease. The other ten per cent will require the removal of polyphoid hypertrophies and badly diseased mucosa. A diseased antrum should be operated on as soon as the diagnosis is made. The operation may be done under either local or general anaesthetic. If a general anaesthetic is used we should be sure to pack firmly the posterior nares. In either case the suction apparatus with a special tip is indispensable. A large Eustachian catheter makes a very good suction tip for this work. If you are reasonably sure that you are not dealing with a chronic condition with polyphoid hypertrophy the following operation should be done. Remove a small piece of the lower border of the inferior turbinate, then with a round, slightly curved antrum chisel, six mm. in diameter, placed close under the attachment of the inferior turbinate near the junction of its anterior and middle third, a slight tap with a mallet will carry it into the antrum and leave a hole large enough to introduce a Pierce antrum rasp, or better if the patient has a large nose and antrum, a Hajek punch. With these instruments the opening can be made the full length of the antrum and level with the floor of the nose. The antrum and field of operation should be thoroughly cleaned by suction and the antrum lightly packed with a strip of iodoform gauze. The pack should be removed within thirty-six to forty-eight hours, and if necessary the wound cleaned with sterile normal saline and suction. At this time with the Holmes naso-pharyngoscope sterilized in alcohol we may be able to inspect part of the antrum. If we find some part of the lining mucosa very much thickened and diseased we should use a small pledget of cotton applied on an aluminum applicator, which we can easily bend at the proper angle and thus apply to the part a ten per cent solution of nitrate of silver. Then with a small syringe armed with a silver canular, bent at about the same angle of an Eustachean catheter, we should instill into the sinus daily about two c.c. of twenty per-cent neo-silvol. I have used five percent mercurochrome in many of these cases, but think the neo-silvol more effective and not so disagreeable on account of the stain.

All maxillary sinus infections except those containing polyphoid hypertrophies will get well under the above treatment in from ten days to three weeks, and certainly with very little pain and discomfort to the patient. In some cases we will find the floor of the antrum much lower than the floor of the nose; where this is true suction will prove a great aid in our treatment by thoroughly cleaning the sinus each day before instilling the neo-silvol.

We should sacrifice as little of the inferior turbinate as possible, but if we find the antrum filled with polyps, it will be necessary completely to remove its anterior third; then with a large opening in the antrum and properly shaped curets, we shall be able to remove the polyps and most of the diseased mucosa. Any diseased tissue left may be treated with ten percent nitrate of silver and the aluminum applicator as described above. We should also utilize the instillation of neo-silvol in these cases.

Let us reserve the Caldwell-Luck and Denker operations for the badly diseased, very irregular antrum and those with some evidence of bone necrosis.

SUMMARY.

First. In diseases of the maxillary sinus we have too often followed the beaten paths of our predecessors rather than adhering to the surgical principles taught us in regard to treating infections at other places in the body.

Second. Infection of the maxillary sinus is an heir to many complications and responsible for many symptoms of general systemic diseases. The diagnosis is often overlooked on account of its vague symptoms.

Third. By a careful examination with the proper equipment one should always make a diagnosis of antrum disease.

Fourth. In spite of its many anomalies and abnormalities it is always possible to gain entrance to the antrum through the nose close up under the inferior turbinate.

Fifth. The needle puncture and large irrigation should be discarded both for diagnosis and treatment of the antrum infection.

Sixth. Nearly all cases of maxillary sinus infection will rapidly get well with very little discomfort to the patient during treatment, if a large opening is made under the inferior turbinate, giving a chance for good aeration and drainage, and followed by the use of suction and daily instillation of twenty percent neo-silvol.

Seventh. In long standing cases of antrum infection, with badly diseased, thickened mucosa, or following the removal of polyps, a ten percent solution of nitrate of silver applied with cotton on the properly bent aluminum applicator is the best treatment, and this can best be applied following examination with the Holmes' nasopharyngoscope.

COLOR ACUITY: ITS IMPORTANCE IN THE EARLY DIAGNOSIS OF THE DISEASES OF THE CONDUCTING PATHS AND CENTERS AND DISEASES OF THE NEUROEPITHELIUM.*

A PRELIMINARY REPORT.

M. EARLE BROWN, M. D.,

Chief of Ophthalmology, Mercy Hospital,

NEW ORLEANS.

The author makes a routine color acuity test, upon all patients in conjunction with visual acuity tests as follows: After recording the amount of the manifest refraction, patients are required to determine the color of test objects placed six (6) meters in front of them in a good light.

If a red test object of 2 m. m., and a green one of 5 m. m., can be discerned, the color acuity for red and green are considered normal. A blue test object of 7 m. m., placed 15 C. M., eccentric to the point of fixation, if recognized is considered normal.**

The color acuity threshold is determined by diminishing the distance between the patient and the test object, *e. g.*, blue 5/6, red 4/6, and etc.

When the color acuity threshold is below 6/6 for any of the colors, peripheral fields and central field studies are made.

Studies of the first hundred cases furnished considerable data, which is being tabulated with a view of standardizing the test, and will be reported later.

Three cases of especial interest will be cited:

Case No. 1. C. H. C. (male), age 44, visual acuity O. U. 20/30. Color acuity red (O.U.) 15/20—refraction under the influence of a cycloplegic showed compound hyperopic astigmatism. R. O. U., plus .50 sphere combined with plus .50 cylinder at ax .90 equaled O. U. 20/20. A plus

*Read before the Orleans Parish Medical Society, Oct. 26, 1925.

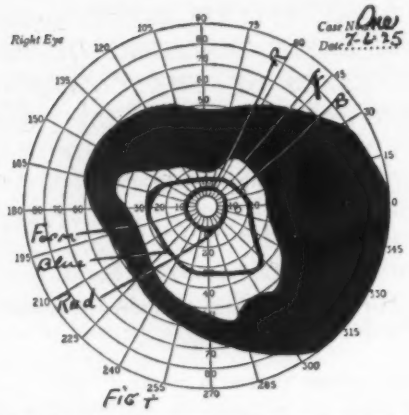


Figure No. 1-A—Concentric contraction plus unequal defects. Typical in optic neuritis.

one sphere was added for near. The fundus was free from pathology. Tension with Schiotz tonometer was 18 m.m. Perimetric visual field studies (Case No. 1, figure No. 1) demonstrates a concentric contraction plus unequal defects and is the type of contraction found most typical in optic neuritis.

Chronic hyperplastic sphenoiditis was diagnosed and confirmed by radiologic examination made by Dr. Amadee Granger, of New Orleans, whose report follows:

Record 14907 "shows a chronic sphenoiditis and posterior ethmoiditis with hyperplastic changes in the right side. The left maxilliary sinus is slightly dense. Most probably from thickened mucosa. Dr. J. R. Hume, with whom I am associated, did a bilateral ethmo-spenoidectomy. Figure No. 2 shows the remarkable gain for form and color made sixteen (16) days following operation."

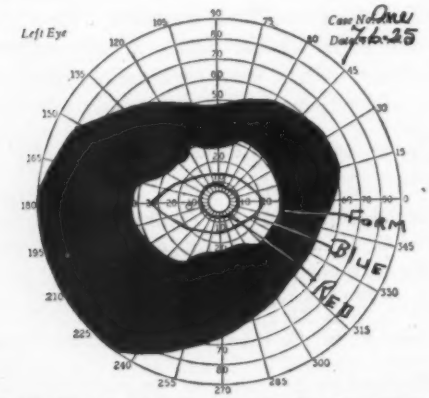


Figure No. 1-B—Concentric contraction plus unequal defects. Typical in optic neuritis.

Case No. 2. Miss A. G. A., age 28, visual acuity O.U., 20/20, color acuity (red) 12/20. Fundus negative. Visual fields are of the concentrically contracted type both for form and color as demonstrated in figure (3), which is a classic of primary optic atrophy, it will be observed how blue and red conform to form and green being absent. Were they not absolute evidence that the papillo-macular bundle was functioning normally in each eye, optic atrophy would have been diagnosed instead of chronic hyperplastic sphenoiditis, glaucoma of course being eliminated. The diagnosis was further confirmed by radiologic examinations and Dr. Hume's bilateral ethmo-sphenoidectomy.

Figure No. 4, A and B, made twenty-one (21) days following the operation shows a field of the concentrically contracted type plus unequal defects, both for form and colors, it will be observed that green has returned and red had increased, which they would not have done in any

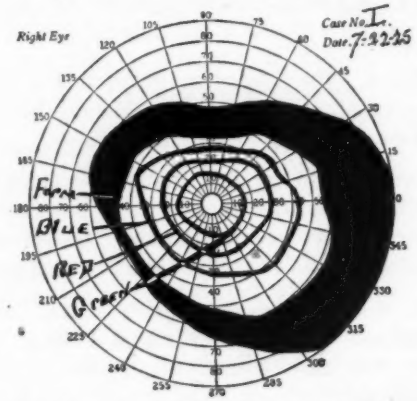


Figure No. 2-A—Concentrically contracted field usually found in atrophies of the optic nerve.

of the atrophies. The radiograms in this case were made by Dr. Leon Menville of New Orleans.

Fig. 4, C. & D., made 72 days following operation, is self-explanatory.

Case No. 3. I. G. (made), age 29, visual acuity O. U. 20/, color acuity (red) O. U. 15/20. Fundus negative. Peripheral fields again demonstrate the contracted type plus unequal defects. Chronic hyperplastic sphenoiditis was again diagnosed and confirmed by methods similiar to those used in case No. 2. The patient unfortunately did not return for further study.

It will be observed in all three cases central vision was normal, and the peripheral field studies were all of a marked concentric contarction type both for form and color. The latter undoubtedly would have been

overlooked had not a color acuity test been made. Most of the diseases of the conducting paths and centers as well as the diseases of the neuro-epithelieum can be studied long before symptoms are revealed, and many cases of blindness prevented.

The simplicity of the test should commend it to medical examiners in schools, industrial plants, life insurance companies, and medical officers on recruiting duty in the Army and Navy.

Studies of diseases of the conducting paths and cents and of the neuro-epithelium and most especially those diseases of the visual pathway, behind the eye ball, are to an ophthalmologist using an ophthalmoscope, nothing more than a pathologist gazing through his crystal at a pathological field in the background of a living eye.

We then must necessarily conform to the studies of Peters, with the perimeter for

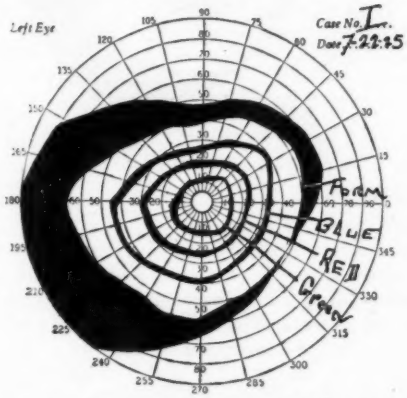


Figure No. 2-B—Concentrically contracted field usually found in atrophies of the optic nerve.

the methods so valuable in the early diagnosis of such diseases. It is, of course, impossible to make perimetric field studies upon all patients. However, the authors method of using the color acuity test will very effectively separate the sheep from the goats, and permit us to make greater use of the knowledge contained in Peters' book.

**Reference—The Principles and Practice of Perimetry, by Luther C. Peters, 1923.

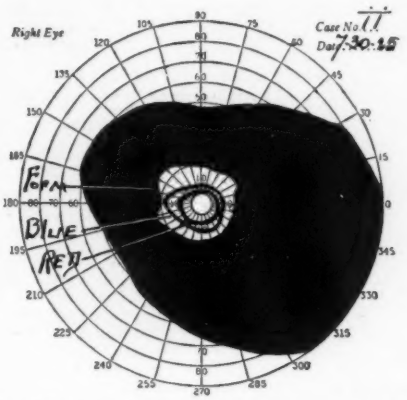


Figure No. 3-A—A classic of primary optic atrophy.

DISCUSSION.

Dr. W. R. Buffington (opening): I am sorry there are not more of the Eye, Ear, Nose and Throat men here tonight to discuss this paper because this is one dealing with the so-called "border-line" case: these cases belong not only to the eye man, but interest the nose and throat men as well. This work Dr. Brown is doing is very instructive! it is work we all ought to do in a most painstaking manner.

In sinus disease especially, there is sometimes marked failing of vision. In the contracted fields Dr. Brown showed us there are many things to be considered. The markedly contracted fields he gave with 20/20 vision with corresponding contraction of form, and color would appeal to me as not being field of optic atrophy, but fields of glaucoma. One of the earliest things to be lost in optic atrophy is color—particularly red and green. There are so many things that enter into the field of vision. We ought to know exactly un-

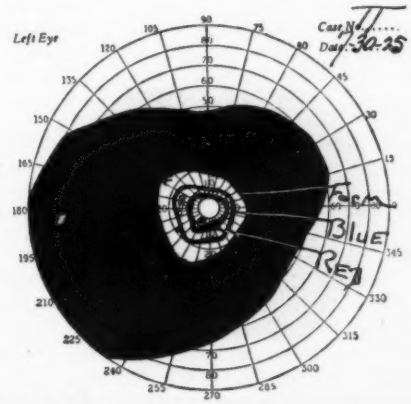


Figure No. 3-B—A classic of primary optic atrophy.

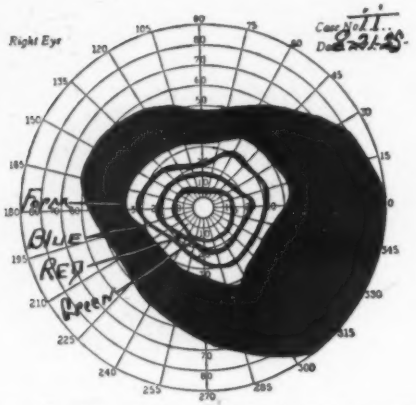


Figure No. 4-A—Shows a marked gain for form and red, green has returned.

der what conditions tests were taken. These are the things that will influence color perception and color field: intensity of the stimulus, the intensity of illumination; saturation of color, accuracy of fixation; background color and character, and errors of refraction.

Let us take error of refraction first. High myopic for instance of 15 or 20 diopters, would show markedly contracted field of vision. It would be impossible for us to say whether the contraction was due to the myopia itself or to some serious pathological condition behind it.

If you take a field of vision with a southern exposure at 1 o'clock on a clear, dry winter day, and then take that same field of vision at 3 o'clock there will be a difference in the field of vision—red, blue and green—at least from 15 to 25 degrees. Think of that. At 1 o'clock you take the field of vision; take that field three hours later and there can be 15 degrees of variation. That is an important thing. If our visual fields are to

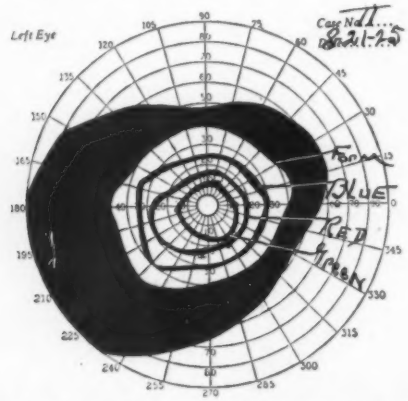


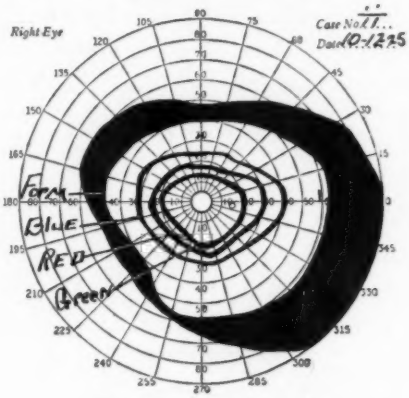
Figure No. 4-B—Shows a marked gain for form and red, green has returned.

be of any value—we must take all these things into consideration. We must have a uniform method which could be taken as a standard:

1. Southern exposure
2. Clear day
3. About 1 o'clock

Saturation of color can make 10 or 15 degrees difference in the amount of perimetric vision. When we take down the field of vision we should say what was the refractive index, what was the stimulus and background, the size of the object we were using—whether movable or stationary.

Intensity of illumination or stimulus can be sufficient as to make blue, red, and white coincide. Think of that enormous variation due to two factors alone in measurement of one field.

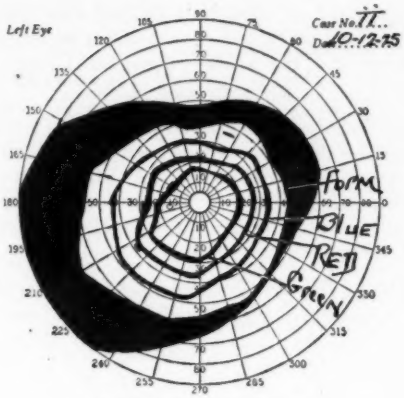


Case No. 2—Figure 4. C.

Dr. Monte Meyer: Dr. Buffington is certainly right when he says how difficult it is to take uniform accurate fields of vision, not only for form but colors as well. A field to be accurate must be taken fairly quick before the eye fatigues and with an understanding co-operation between the examiner and the examined. Fields must be taken several times on the same patient under the same conditions of illimunation and then a mean taken.

Most authorities agree that with the way we usually take fields, the periphery of the retina is for practical purposes color blind. In a normal field, green has the smallest limitation, then red, and blue. The fields may interlace or even interchange within certain limits and still be considered normal fields due to change in the illumination.

Color has three distinct characteristics: namely (1) hue or color depending on the wave length of the light producing it; (2) Intensity (bright-



Case No. 2—Figure 4. D.

ness or luminosity) ;(3) saturation which increases in proportion as the amount of admixed white light decreases. An eye with normal color sense sees the spectrum in rainbow grouping from red to violet. The change from one color to another is effected by a change of hue and brightness there being no neutral shades.

Rapid decrease of color perception is as a rule always indicative of optic nerve disturbances that will lead to blindness if not checked by removing the cause. Disturbance in the perception of blue is due to a lesion of the percipient elements if the retina (rods and cones) as in choroiditis, retinitis, retinal detachment and hemeralopia. Disturbance of red and green perception is due to a lesion in the conducting elements (the optic nerve itself or surroundings).

Dr. Leon White of Boston first called attention to the relation of ethmoiditis and sphenoiditis and the sudden loss of central vision. His results with operative procedures upon the diseased sinuses were remarkable in restoring the lost vision in a short time, and naturally they have been duplicated all over the world.

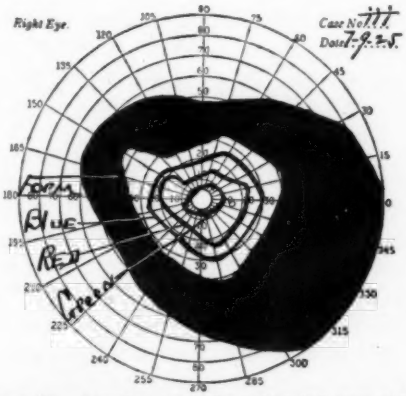


Figure No. -5A—Concentrically contracted type plus unequal defects.

This subject of color disturbance and its causative factors is comparatively a recent advancein the field of ophthamology and Dr. Brown's test is a very simple one, and should be tested out by numerous investigators to see if they secure the same results.

Dr. M. Earle Brown (closing): Dr. Buffington has described many of the imperfections of the older instruments being used even at this day for making perimetric studies of peripheral visual fields, the field studies shown tonight were all made at 9 o'clock in the morning, but whether at 9 o'clock in the evening or at the zero hour, in the Artic or the Tropical zones, by using artifical illumination with a day light filter, uniform illumination can be constantly obtained.

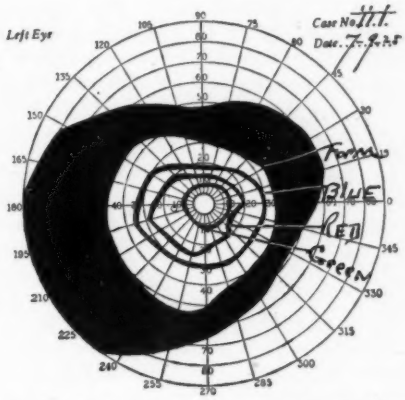


Figure No. 5—Concentrically contract type plus unequal defects.

We agree with Dr. Buffington "that peripheral field studies will have a different interpretation, in the hands of some observers," however, the difference can only be due to improper technic provided that imperfections of instruments light and etc., of course having been overcome.. "Thoroughness always brings good returns and indifference is paid in its own values."

The change in the color intensity of the stimulus from light exposure and the ravages of time, can be eliminated by using the Hidelburg papers, and renewing same when necessary.

We certainly cannot agree with Dr. Buffington's interpretation of the field projected this evening as Case No. 2 figure No. 3 A & B., which he believed to be one of Glaucoma. A glaucomatous field is recognized by, (1) Early loss of the nasal field: (2) In sector like defects of the superior or inferior nasal Quadrants: (3) In en-

largement of Mariottes blind spot (Bjerrum's sign.) (4) In concentric contraction of form and colors: (5) In Preservation of central vision for form and colors with contracted peripheral fields to a small area: (6) In almost complete loss of peripheral field with preservation of a small temporal area and a small central island or total loss of central vision: (7) Seidel's sign: (8) Elliot's sign: (9) Roenne's step. Tension with Schiotz tonometer was normal, there was no pathology in the fundus as previously stated and there were no clinical symptoms, which definiately eliminated glaucoma.

Dr. Meyers in speaking of the difference in the wave lengths of colors explains why a test object of 2 mm. for red, and 5 mm. for green, and 7 mm. for blue was used. It is exceedingly difficult to believe like Dr. Meyer that "The colors observed peripherally are centrally observed, that colors cannot be seen peripherally." The behavior of colors centrally differ from the periphery e. g. centrally red is seen best, then green, then blue. Peripherally, blue is seen best, then red and lastly green.

I have shown you gentlemen three cases of Chronic Hyperplastic Sphenoiditis, diagnosed from ophthalmological studies and confirmed by radiological observations and surgical treatment. Nothing having been said about clinical symptoms. Case No. 1 suffered from headaches for several years finally having to resort to opiates for the relief of pain. Case No. 2 suffered from violent headaches for the past ten years both patients are free from pain and have gained in weight following operative treatment.

That color acuity is diminished before visual acuity, is the truth and must prevail. That perimetric studies are essential in the practice of ophthalmology is granted, there remains only the technic of the color acuity test to be explained. Color acuity is governed by four factor.

A. Illumination (natural and artificial.)
B. Environment.
C. Preexposure.
D. Intensity of the stimulus.

Natural illumination cannot offer uniform illumination at different times of the day or season.

Artificial illumination shows many variations in colors without daylight filtration.

Environment of surroundng field, color of background, clothing and etc.

Pre-exposure—stimulation of the retina to a gray the same brightness of the colored stimulus.

Intensity of Stimilus depends upon the illumination, the size of the stimilus, the hue of the color employed and the angle substended by the test object.

Experiments were made with 3 m.m., and 4 m.m., red stimulii in cases where artificial illumination was used without daylight filters. An exhaustive study of colors can be obtained by referring to the original papers of Feree & Rand and Dr. Peters text book.

I wish to thank Drs. Buffington and Meyers for their masterful discussion of this paper, and Dr. A. C. King, who colored the lantern slides.

MERCUROCHROME IN SURGERY.*

SYDNEY W. JOHNSTON, M. D.,
VICKSBURG, MISS.

Mercurochrome-220, the disodium salt of dibrom - oxy - mercurifluorscein was developed by Drs. Young, White and Swartz in 1919 after a three year study of the different dyes, looking forward to a more effective urinary antiseptic. The drug in a 2% solution is a very powerful germicide and is rapidly supplanting iodine in injuries of the skin and in preventing infection in any superficial wound. It leaves a deep and almost permanent bright red stain which is to its advantage since it shows the amount of surface covered by the application. It does not burn nor irritate an abrasion nor the skin, as iodine does, thus affording a wonderful antiseptic for large raw surfaces which otherwise would have been very painful with the application of any other antiseptic. Its effectiveness of course is due to the large amount of mercury which it holds, being about 26%.

In my paper today I am not going to discuss the use of mercurochrome as a local application in the treatment of wounds, but will devote the space to the intravenous use of mercurochrome in septic conditions. Dr. Young and his collaborators have shown that a 1% and even stronger solution of mercurochrome can be given in-

*Read before the Mississippi State Medical Association, Biloxi, May 12-14, 1925.

travenously with no serious effect and acting upon this we have treated in the last ten months approximately 100 cases by the intravenous use of a 1% solution of the drug.

Probably the most striking results occured in a series of infections which occured in our hospital early in July. There were operated upon on July 6th and 7th, six fairly clean abdominal cases. The morning of July 7th it was reported to me that two of the patients operated on, on the morning of July 6th had very high temperature, about 106. We did everything possible for them but both died the following day which was less than 72 hours from the time of the operation. The afternoon of July 7th the third caseoperated upon on the afternoon before developed a temperature of 106. I gave her 20cc. of a 2% mercurochrome solution intravenously. The following morning her temperature dropped to normal and she made an uneventful recovery. On July 8th the three cases operated on on July 7th developed a temperature of 106 and each was given 20cc. of 1% mercurochrome. Within eight hours the temperature was down to less than 100 and all three cases made an uneventful recovery. The organism that caused the infection was found in the blood of all the cases and resembled very much the Kleb-Loeflus bacillus. The infection was traced to our sterile nurse in the operating room who at the time was suffering with a severe post nasal catarrh. One of the cases that died was given 100,000 units of diphtheria antitoxin but with no result. There can be no doubt that all six of the cases would have died had we not used mercurochrome.

We have treated only one case of puerperal septicaemia, that being a young woman 33 years of age who had been ill about two weeks when she came to the hospital. She was having high temperature and rigors every three or four hours. She was given 15cc. of 1% mercurochrome and in less than 24 hours her temperature dropped to normal and remained so during the balance of her stay in the hospital.

We have treated more cases of pyelitis with mercurochrome than any other class and our results have been very gratifying though not as remarkable as in the above mentioned cases. A white man age 40, who gave a history of having chills and fever for six or seven months and who had taken about eight ounces of quinine with no result came to us in November 1924. He had a blood count of 18,000 and a cystoscopic examination showed pus discharging from the right ureter. He was given 20cc. of 1% mercurochrome which was repeated every third day until he had taken three injections. He left the hospital perfectly well and when we heard from him some two months later he was still improving and had had no more rigors or fever. We have treated about 40 additional cases with good results. I want to mention the illness of my own child, a little girl age 6. She was taken ill with an abscess of one of her molar teeth and 36 hours later developed a severe case of pyelitis. Her temperature ran very high, her blood count was 20,000. We were afraid to give her mercurochrome on account of a valvular heart lesion which she has, but about the 6th day her condition was so much worse, we gave her 10cc. of ½% mercurochrome. She made an uneventful recovery and on the 4th day her blood count was normal.

Our next type of cases was gonorrheal arthritis in which we have had excellent results. A negro man age 28, was brought to the hospital on a stretcher. His right knee being swollen to about three times its normal size. He was very toxic, giving a history of being in bed for three weeks, gradually growing worse. We gave him 30cc. of a 1% solution which was followed by the most severe reaction that we had ever had. He was badly salivated, developed diarrhea which in a day or two got worse. However his temperature dropped to normal and on the 5th day he left the hospital walking. He is now mak-

ing a crop and his right knee is no larger than his left. We have treated about 5 cases of gonorrheal rheumatism, two with fairly good results and three with perfect cures. We have used mercurochrome in one case of typhoid which was accompanied at the onset with a severe pyelitis. She was given two doses of 20cc. of 1% mercurochrome four days apart. The blood count which was about 18,000 dropped to 5,500 four days after the second dose. She recovered after a very stormy and prolonged illness lasting more than two months. I do not think it helped the typhoid any though it cured her pyelitis. Dr. Gus Street reported to me that he used mercurochrome in a case of typhoid in which the disease was aborted, the patient's temperature dropping to normal on the 17th day. We have only been able to use mercurochrome in two cases of pneumonia both of which recovered. In one case of mastoiditis with brain improvement, we gave mercurochrome with no results, the patient dying after a prolonged illness. In a case of acute peritonitis following a ruptured pus tube, death occurred after an injection of mercurochrome. In neither case was death due to the drug. We have had good results in gonorrheal cystitis.

In this condition we always instill ½ ounce of 2% mercurochrome into the bladder accompanying it with 20cc. of a 1% intravenous. We have had excellent results in all our cases.

Summing up the results we feel that mercurochrome occupies a field equally as useful as arsphenamine. The critics who base their unfavorable comments on mercurochrome on the assumption that it is impossible for such a small amount of mercury in the large amount of circulatory blood to be effective, forget that arsphenamine in equally as weak a solution kills the trpyeinma, a fact admitted by every one.

In all cases we had rigors and temperatures varying from 102-104 following the injection, the rigor usually coming on in less than thirty minutes after the injection. Dr. Young thinks this reaction is beneficial and I believe that in those cases where we had the greatest reaction, we had the best results. Until some one finds a more satisfactory germicide than mercurochrome, I shall certainly continue to use it in all septic cases.

EVIDENCES OF HYPOPHYSEAL DYSFUNCTION, WITH LANTERN SLIDES.*

I. I. LEMANN, M. D.,
NEW ORLEANS.

In these days of unlimited romancing in the field of endocrinology, when detail men and commercial manufacturing firms undertake to instruct us in the wonders to be expected from the use of their products, it is wise to keep our feet on firm ground and to differentiate between what is firmly established and well proven and what is highly speculative. The wonderful advances in our knowledge of disturbed function of the thyroid, the pancreas, the suprarenals, the parathyroid and the pituitary glands may lead us to hope for still greater developments in the future.

Modern conceptions of hypophyseal dysfunction date to the eighties of the last century when the great French clinician, Marie, published his first observations upon the relation of acromegaly to pituitary disease. Since that time a great many investigations have been made by various experimental methods and a very great deal has been added to our knowledge of the disturbed function of this body. Much is still unknown and many apparent contradictions still exist in the results obtained by various investigators. The problem has been attacked not only by attempts

*Read before the Orleans Parish Medical Society, December 14, 1925.

to correlate definite clinical pictures with definite pathological anatomical findings but also by injection of extracts, by feeding pituitary substance, by transplantation of the pituitary and finally by extirpation. I shall exhibit to you presently a series of slides illustrating the clinical syndrones which we have come to know are associated with definite damage to the pituitary. Injection of extracts would seem to show that the anterior lobe is "relatively speaking inactive" (Cushing), while the extracts of the posterior lobe, as is well known to you, exhibit marked pressor effects and bring about uterine, vesical and intestinal contractions. Feeding of the pituitary substance to animals has yielded only uncertain information. Crowe, Cushing and Homans have shown that the life of animals after total hypophysectomy could be prolonged by immediate reimplanation into the cerebral cortex of the excised gland. Cushing and his associates demonstrated after extirpation of the hypophysis the following:

I. Cutaneous changes and adiposity.

II. Disturbances of body temperature.

III. Disturbances of growth.

IV. Mental changes.

V. Alterations in carbohydrate tolerance.

VI. Changes in urinary secretion.

VII. Secondary changes in other ductless glands.

They found that hypophysectomy in adult dogs deprived of all but fragments of the anterior lobe produced a syndrome with adiposity, increased sugar tolerance, lowered body temperature and reversive sexual changes. When the operation was done in puppies it caused a similar syndrome with a persistence of sexual infantilism and additional skeletal undevelopment and evident psychic disorder. As we shall see this latter corresponds to the syndrome in the human known as the Frolich type. It has been shown that by experimental removal of the entire hypo physis that the organ is essential to life. Removal of the anterior lobe is equivalent to total hypophysectomy. Removal of the posterior lobe in which is included the greater part of the pars intermedia has no early nor late result. I call your attention to the apparent discrepancy between this statement and one previously made, namely that the extract of the anterior lobe is without effect, whereas the extract of the posterior lobe is very potent. Our knowledge of the pathological physiology of the pituitary may be diagrammed in somewhat the following fashion:

I. Overfunction (Anterior Lobe?) Hyperpituitarism, acromegaly, gigantism).

II. Underfunction. Dystrophia adiposogenitalis.

A. Anterior lobe deficiency.

1. Disturbance of growth (skeletal defects).
2. Development of obesity (hypophyseal fat dystrophy).
3. Genital hypoplasia (infantile genitalia).
4. Temperature anomalies (hypothermia).
5. Cachexia hypophyseopriva (apitui tarism).

B. Posterior lobe deficiency.

1. Hypotension.
2. Increased sugar tolerance.
3. Diminution of basal metabolism.
4. Asthenia.

I shall now have thrown on the screen a few pictures illustrative of some of the clinical entities. The first pictures that I show you illustrate acromegaly. I call your attention to the characteristic thickening of the soft parts of the face and the enlargement of the extremities. The sec-

ond slide shows a patient before and after the development of the disease. Both of these pictures have been taken from Cushing's monograph. The next slide, also from Cushing, illustrates a pituitary giant. I show you next the pictures of a young woman whom I saw some fifteen years ago and whose case Dr. Van Wart and I reported at that time. She was twenty-four years old. Her complaint was of headaches from two weeks to six months apart. She had been well until she was seventeen years old. At that time she had to stop school on account of her health. She had previously stood well in her classes. She was sent home from boarding school because she was nervous. Soon after coming home she became well and was able to work. It was apparently a very slight illness and the fever was always below 102°. There was no delirium. Troublesome eye symptoms were the first to attract attention. Then followed the headaches which had become more intense every month. They lasted usually twenty-four hours but once she had a headache that lasted two or three weeks. During that time she seemed to be in a deep sleep but was not entirely unconscious and could be roused though she could not always speak. Of this attack she recalled nothing. As you see she was very much emaciated. There was complete absence of all secondary sexual characteristics. You will note the absence of axillary and pubic hair and of all mammary development. The uterus was rudimentary. The visual fields showed large scotomata and a hemianopsia for red. The radiographs of the long bones showed failure of ossification of epiphyses. This patient is a good example of the so called Lorain type of dyspituitarism.

The next slide I show you is taken from the Iconographic de la Saltpetriere. It shows two girls, sisters, one fifteen years and five months, and the other twenty years and six months. They have also the long slender trunk, the lack of axillary and pubic hair and of mammary development. They, too, belong to the Lorain type.

This colored boy whom I saw at the Charity Hospital who seems to be about twelve years old was really thirty-one years of age. You will note the same characteristics that I have pointed out in the previous slides. Until the age of twelve he was just like any other boy. At that time he suffered from what was said to be neuralgia and kidney trouble. He had bad attacks of blind staggers and then was confined to bed for three months. The vision was gradually lost over a period, the length of which the patient did not know definitely. He had been in an institution for the blind for several years and was stone blind. A skiagraph of the sella turcica which I now throw on the screen shows definitely a shadow mass filling the larger part of the sella turcica.

This white boy who was admitted to Touro last year was also apparently about the age of ten or twelve but was actually twenty-six years of age. He had had spells of sickness ever since he was eight years of age. He did not remember any of these spells except one when he was seventeen years old. He was then in his second year of high school. He went to bed and was there four weeks with weakness and terrible headaches. After four months he went back to school and continued for about a year when he had to give up his training. For two years prior to the time that I saw him in 1924 he had been free of attacks of headaches. You will note that he has the appearance of a bright alert boy about twelve years old. He has no axillary or pubic hair and the genitals are small. The eye grounds were reported by Dr. Feingold as normal and the visual fields as apparently normal but not perfectly dependable. The X-ray examination of the sella turcica showed a destruction of both anterior and posterior clinoid processes and apparently calcification of the outer limits of a tumor. Dr. Isidore Cohn has estimated

from the radiographs that the skeletal development of the patient is that of an individual from thirteen to fifteen years of age. Dr. Van Wart reported his intelligence as that of a boy of ten years.

I show now a slide of the condition described as Frohlich's syndrone. This man was twenty-seven years old although he has the height and general appearance of a boy about ten to twelve. You will note his adiposity in contrast to the slender types I have shown. He has the sexual infantilism that they exhibited.

The next slides taken from Cushing's book show the girdle distribution of the fat in cases of pituitary obesity.

The young lady whose pictures I show you now is thirty-one years old. When she consulted me in March of this year, at which time these photographs were taken, she weighed 307 pounds. She had always been stout and had weighed 223 pounds at thirteen years of age. She had not weighed since because of her sensitiveness upon the point. She had not a single complaint. She had never had headaches. She had not menstruated since an attack of influenza in 1918. Prior to that time she had menstruated very regularly. She was very active and had never been sleepy during working hours. You will note in addition to the obesity, which in her case i general, a hypertrichosis of the face. An X-Ray of the sella turcica which I now throw on the screen shows nothing especially abnormal unless it be that it is somewhat small. The visual field of the right eye was reported by Dr. Feingold as apparently normal. He found, however, that the left eye presented a marked defect in the lower nasal quadrant with a projection of the defect upward and to the temporal side. He considered that the field defect in the left eye pointed to an affection of the chiasm at the upper temporal aspect on the left side. I show you now a projection of the visual field of this left eye. A glucose tolerance test was carried out with the following result: 100 grams of glucose were given on a fasting stomach. The blood sugar rose from a level of 106 mgs. per 100 c. c. of blood in the fasting state to 190 mgs. one-half hour after the glucose meal; fell to 160 mgs. after one hour, to 114 mgs. after two hours and to 80 mgs. after three hours. There was no sugar in the urine at any time. The form of the curve is normal though the level to which the blood sugar rose is abnormally high. Under medication with thyroid substance and pituitary substance this patient has gone down in weight over one hundred pounds, so that last month she weighed 194 pounds. I am showing you on the screen a picture of her at present.

The question of the relation to diabetes insipidus to pituitary disease is one still open for debate. "Camus and Roussy came to the conclusion that the lesion which determines whether or not a polyuria develops is in no way connected with the hypophysis. In five of their cases in which an intense polyuria developed the hypophysis was unaffected. Total hypophysectomy performed without injury to the base of the brain is not followed by polyuria. Previous removal of the hypophysis does not prevent the development of polyuria if during the second operation the optopeduncular region is injured." "Superficial lesion of the base of the brain often involving only the surface and produced involuntarily in the removal of the pituitary body is followed by polyuria." On the other hand there is the strong clinical evidence of the control of the polyuria in diabetes insipidus of pituitrin. I have had in the past year the experience of following a case of diabetes insipidus in the wife of a colleague in whom we have had most gratifying results from pituitary injections. This lady, thirty-one years old, beganin January 1925 to have an abnormal thirst although prior thereto she would drink very small amounts at a time. At first her abnormal thirst was

taken to be an indication of pregnancy, especially as the menstruation which had been previously more or less free and of five or six days' duration was in January very scant and of only one day's duration. I may say parenthetically that later developments showed that she was not pregnant. The increasing thirst continued together with a tremendous diuresis so that by the middle of February 1925 when I first saw her she was passing three or four gallons of urine in twenty-four hours. She was at that time in a most distressing condition. Her sleep was badly disturbed. She would drink two or three glasses of water at a time and would hardly have time to get to her room and in bed before she would have to go out to urinate and to get more water. The effect of pituitrin was prompt and magical. By the injection of from one-half to 1 c. c. two or three times in twenty-four hours we have been able to keep her comfortable. The effect of an injection lasts at least four or five hours. An attempt was made to use pituitrin by spray in the nose. While this afforded some relief from the urinary stand point, it caused so much local disturbance in the nose that it had to be abandoned.

CUTANEOUS REACTIONS AS AN AID TO DIAGNOSIS.*

ALBERT W. PIGOTT, M. D.

OXFORD, MISS.

Cutaneous reactions as a means of ascertaining immunity to certain infections, and diagnosing the presence of others as well as testing the susceptibility of the individual to various organic substances, have of recent years, come to be recognized as playing an important role in medicine.

Von Pirquit, in 1900 discovered that the application of tuberculin to the abraided surface of the skin caused a characteristic local reaction in tuberculous infants and no reaction or a very slight one in healthy infants. From that time there has been a constant advancement of the use of the skin test in diagnosis until today it no longer occupies a place in experimental medicine but may be, and is, used successfully by the general practitioner. With the modern development of biological and pharmaceutical houses the various sera and extracts are available to anyone desiring to take advantage of these reactions. The tests can easily be carried out in the office or home.

For the sake of convenience and brevity in this discussion the cutaneous reactions are divided into three groups: (1) those ascertaining immunity to certain infections; (2) those aiding in the diagnosis of disease and (3) those determining the susceptibility of the individual to various proteins.

In the first group we find the Schick test for immunity to diphtheria and since its introduction in 1913 it has proven a great blessing to the profession and to the laity. The test not only affords a means of finding those naturally immune to diphtheria, which is from fifty to sixty per cent of the entire population, but it is also useful in controlling artificial immunity in the susceptible. A brief review of the technic of this test might not here be amiss. 0.2 cc. of diphtheria toxin so diluted that this amount contains one fiftieth the minimum lethal dose for the guinea pig is drawn into a hypodermic syringe. The toxin may be obtained from biologic supply houses in packages containing a small amount of the toxin and sufficient sterile salt solution to make the required dilution when they are mixed. It should be freshly diluted and must not be used after twelve hours. Clean an area of the skin of the forearm with alcohol, draw the skin tight and inject the toxin into the skin, not through it. A white wheal-like swelling

*Read before the North Mississippi Six Counties Medical Society, Holly Springs, Miss., November 18, 1925.

appears if the injection is correctly made. A like amount of the dilution which has been heated to seventy-five degrees Centigrade is injected into the other arm as a control. No reaction occurs in those immune to diphtheria but in those not immune a distinct red spot appears at the site of the injection of the unheated toxin within twenty to thirty-six hours. This is followed by induration, reaching its height about the fourth day. The Schick test is very reliable if the proper toxin be used and if the reaction be correctly interpreted.

Another immunity reaction is the Dick test for immunity to scarlet fever, introduced by G. P. and Gladys Henry Dick of Chicago in January 1924. This test proves that fifty to sixty per cent of the population have a natural immunity to scarlet fever. The toxins used in this test are found in the filtrates of hemolytic streptococcus and it is also possible to confer artificial immunity by injecting the same toxins. The test is carried out in the same way as the Schick test for diphtheria and the dose is one skin test dose which is contained in 0.1 cc of the standardized toxin.

Of the skin tests aiding in the diagnosis of disease I wish to discuss first the tuberculin reaction for tuberculosis. There are several methods by which this reaction may be obtained but I will outline only the two most commonly used. (1) The hypodermic injection. After first determining the patient's normal temperature variations, Koch's Old Tuberculin is used in successive doses, three or four days apart, of one one-hundreth, one-tenth, one, two and five milligram. A negative result with the largest dose is considered final. The reaction is manifested by fever within eight to twenty-four hours after injection and a rise in temperature of one degree F. is accepted as positive. There is some danger of lighting up a latent process with this method. (2) The Von Pirquet test. This is the most widely used of the tuberculin tests. Two small drops of Old Tuberculin are placed on the skin of the front part of the forearm about two inches apart and the skin is slightly scarified, first at a point midway between them then through each of the two drops. A flat end tooth-pick makes a good scarifier. Just sufficient pressure to remove the epidermis is used, care being taken not to draw blood. In ten minutes wipe off the excess of tuberculin. No bandage is necessary. A positive reaction is shown by a papule with a red areola appearing in twenty-four to forty-eight hours. The papule is in marked contrast to the red spot in the control area.

These tests have great diagnostic value in children, especially in those under three years of age. They often show positive in adults that are apparently healthy and are likely to be misleading. However negative tests are very helpful in deciding against tuberculosis.

Noguchi has introduced a cutaneous test for syphilis by injecting a preparation called luetin which consists of ground cultures of treponema pallidum sterilized and preserved with trikresol. This preparation is now on the market and may be secured through any pharmacy. A small drop of luetin is injected into the skin (not under it) of one arm. A drop of the preparation minus the treponema is injected into the other arm for control. A positive reaction consists of an inflammatory induration, papule or pustule usually occurring within forty-eight hours though it is sometimes delayed three or four weeks. The test is positive in tertiary, latent and hereditary syphillis but is usually absent in primary and early secondary cases. Compared with the Wassermann reaction it is more constant than the Wassermann in tertiary and latent syphilis while the Wassermann is more constant in the early cases. Unlike the Wassermann reaction the luetin reaction persists until a cure is effected. Unfortunately luetin produces the typical reaction in non-syphilitics who are taking iodids or bromids so evidently the test needs

further study before the results can be accepted with confidence. If this test can be perfected it will prove a blessing to the practitioner for it will offer a means of clearing up those puzzling cases of late syphilis that give negative or atypical Wassermann reactions.

Hypersusceptibility: Such conditions as asthma, shock following the administrations of antitoxins and therapeutic sera, the urticarias and diarrheas which occur in some people following ingestion of certain foods, etc., can be ascribed to hypersusceptibility. By a simple skin test it is now possible to recognize the hypersusceptibility of an individual to any particular substance such as the pollen of plants, dandruff and serum of animals, drugs and articles of foods. This consists of applying an extract of the substance to an abrasion of the skin as in the Von Pirquet test or by injecting it intradermally as in the luetin test. In injecting the extract care should be taken not to get it under the skin as dangerous symptoms might be provoked in an extremely sensitive individual. The extracts can easily be made by extracting the substance desired with decinormal sodium hydroxide. A convenient way to conduct the test is to place the substance that is to be used on an abrasion of the skin and add a drop of decinormal sodium hydroxid and gently mix and rub into the skin. A positive reaction is evidenced by a redness and swelling. Several substances may be tested at the same time in different areas of the skin surface. A long list of pollens, dandruff and other substances especially prepared for the tests, are available commercially. Drugs may be tested in ten per cent solutions. Horse serum hypersensitiveness is best recognized by injecting intradermally 0.2 cc of a one to ten dilution of normal horse serum in saline solution.

ADDRESS AT THE FAREWELL DINNER TO RETIRING INTERNES OF THE TOURO INFIRMARY, ON SATURDAY, JUNE 20, 1925.*

RUDOLPH MATAS, M. D.

Chief, Surgical Division, Touro Infirmary.

NEW ORLEANS.

"Perhaps it may turn out a Sang,
Perhaps turn out a Sermon."
Burns.

Mr. Toastmaster; my dear Internes:

In compliance with the wishes of our worthy Superintendent and very good friend, Dr. Spelman, I am here, as the Senior Member of the Surgical Staff, to contribute to the memories of this occasion by giving you such advice as my long experience, as a member of this staff and as a teacher and student of medicine, may have taught me should profit those of you who choose to hear it. In assuming the pretentious role of Mentor, which is so often presumed to be the prerogative of age, ('O, how comely is the wisdom of old men!)(1) I am fully aware that advice differs from all other things of value, in that everyone is willing to give it away and that few are willing to take it, even on these liberal terms. Again, I am reminded of one of the maxims of an old, rather cynical but keen sighted philosopher(2) "that we may give advice which may be wise, but we cannot inspire the conduct or give the wisdom to profit by it." On the other hand, our worthy Supervisor, who has given proof that he is learned in script other than that which pertains purely to hospital administration, retorts, as fitting this occasion, "That in a multiude of counsellors there is safety"(3) and, again, quoting the highest authority, commands,

*The substance of this address was originally prepared for and delivered to the medical class of Tulane University on the occasion of the first student body assembly, Sept. 29, 1924, in which the President of the University, Dr. Dinwiddie, and the Dean Dr. Bass, participated. The address was never published. With some modifications, it has been adapted to the present occasion.

(1) Eccl. xxv; v.

(2) La Rochefoucald.

(3) Prov. xi; xiv & xxiv; vi.

"Give here your advice and counsel."(4) What then can I do but bow to such a command and admit, as one who has your interest at heart, "that the mouth of the wise is in their heart"(5) Therefore, in humble imitation of the great apostle, I say unto you, as Paul said unto the Corinthians, "And herein I give my advice."(6)

But what advice can I give that may profit you on this occasion? My vision goes back very clearly to my student days, when my term of service as interne of the Charity Hospital (we were undergraduate ternes then) was coming to a close and I wondered what would be the end of the great adventure in which I had embarked, when I matriculated as a student in the medical school of Tulane University. Four decades and more have elapsed since that momentous period and, if I have survived the stress and strain of an arduous professional life, and if, in spite of my faults and shortcomings, I have the honor to be here addressing you today, it is due to at least four things: First, a robust inheritance for which I can never cease to thank my honored parents; second, tenacity of purpose, without obstinacy; third, a supreme and unalloyed love of my profession, and, fourth, an unlimited and unquenchable ambition to be worthy of its mission! These are what may be termed the intrinsic, inherited, or innate qualities to which I owe largely whatever success I may have attained in my vocation. To these, however, I must add the inspiration and example of the good men and women of superior mould who, recognizing early in my life the honesty of my purpose, stimulated me with their encouragement and supported me with their counsel and the warmth of their friendship. You will pardon this allusion, which may appear egotistic, but which is meant solely to justify, in a manner, my interest in answering the question which is most pertinent to this occasion. What are the conditions that make for success is the study and practice of medicine?

It is said that Sir Astley Cooper, one of the greatest surgeons and most accomplished gentlemen of his generation, was in the habit of addressing the candidates for membership in the Royal College of Surgeons of England, of which he was President, somewhat in the following words: "Gentlemen, you are about to enter a noble and difficult profession; your success in it depends upon three things: First, a good and thorough knowledge of your profession; second, an industrious discharge of its duties; third, the preservation of your moral character. Without the first, *knowledge,* no one can wish you to succeed. Without the second *industry,* you cannot succeed. Without the third, even if you do succeed, success can bring you no happiness." These wise and pithy words epitomize all that is essential to success in the practice, not only of medicine, but of any other profession or vocation. And, as these conditions for success are essential to attain the goal of your ambitions in the profession you have chosen as your life work, it is only right that you should, at the very inception of your careers, begin to make them the chief objective of your endeavors. These conditions, however, presuppose other elementary qualifications, which must be borne in mind at this formative stage of your careers. It is *now,*—at the very start of your professional life,—when your minds are still plastic, most impressionable, most receptive and most susceptible to your environment, that you need most guidance. It is probable that, with many of you, your individuality, your attitude of mind, your special aptitudes, or your deficiencies and your habits, have already become clearly discernible; but, even so, there is an immense territory in your minds which remains unexplored; vast areas of unknown potentialities, still buried in the depths of the unconscious, that remain to be sounded.

(4) Judges xx; vi.
(5) Eccl. xxvi.
(6) ii Cor. viii; x.

It is just now, when you are about to test the value of your scholastic and practical professional training, by launching upon your own responsibilities as independent practitioners, that guiding posts, signs and warnings, will help to keep you in safe paths and save you from losing yourselves in uncharted and dangerous byways. It is at this stage of the journey that you are most likely to profit by the experience of the wayfarers who have long traveled the same road.

Many and precious are the lessons that I learned through hard and bitter experience, either through lack of counsel or through disregard of it,—advice which, if heeded, would have saved me from immense suffering, discouragements and lasting disappointments. But I shall not drift too far along this tempting channel, for I am reminded that time is fleeting and that I must confine myself to what I have learned is essential, as the residue of my experience.

In 1869, fifty-five years ago, Sir James Paget,[7] one of the most illustrious names in the history of British surgery, in answer to the question, "What becomes of medical students?" (propounded by one of his predecessors[8] many years before) traced the careers of 1000 pupils whom he had taught in the previous fifteen years at St. Bartholomew's hospital, London. Of the 1000, only 24 achieved distinguished success; 18 attained considerable success; 507 attained fair success, that is, made a decent living but worked hard to get it; 124 did very poorly indeed; 56 failed utterly; 96 abandoned the profession; 41 died while pupils; 87 died during the first twelve years of practice, and 21 perished from diseases due to their calling.

The conclusion is that only 8.5 per cent. of a medical class will attain eminence or achieve considerable success; that 50 per cent. will make a decent living, but it will be bought by strenuous effort; that 18 per cent. will do very poorly indeed or will fail utterly, and that nearly 10 per cent. will abandon practice.

My distinguished friend, Dr. John Chalmers Da Costa[9] forty-six years later, in commenting on Paget's figures, wrote in 1915:

"I am disposed to think that Paget's figures would apply today; that about the same proportion would fail; about the same proportion will abandon the profession; most of them will feel a lack of public understanding, will be denied public appreciation, will pass lives made of laborious days, which know no 8-hour law, and of disturbed nights, each of which may be a continuous performance; will do much good, for which they will obtain small reward and little praise, and will die worn out, long before the period allotted by the Psalmist. In using the term success, which many, no doubt will attain, I do not regard it as synonymous with wealth. Some men are so busy making money that they have no time to study, to observe, to think. The rich man who has brought no honor to the profession is not a real success. He has lost more than can be paid for by wealth. He may be scheduled as a successful man, but he himself knows that he has failed. 'He that maketh haste to be rich, shall not be innocent,'—to quote Captain Cuttle, 'In the proverbs of Solomon you will find them 'ere words, and when found, make a note of'."

Again, quoting from DaCosta:

"It is discouraging to think of so many failures and so few successes. Some of the failures would have succeeded in another occupation, and when they entered medicine spoiled a good business man, lawyer, broker or farmer. Some would have failed in anything, because of temper or mental inaptitudes or futilities, cowardice, stupidity, laziness, mendacity, dishonesty, disloyalty or jealousy. Many such men began the study, as Richard Carstone did in

(7) Selected essays and addresses, edited by his son, Stephen Paget. London. 1902.

(8) Abernathy (1764-1831), who, it is said, upon entering the anatomical theatre for one of his introductory addresses, looked around at the crowd of pupils and exclaimed, as if with pain and doubt, "God help you all. What will become of you?"

(9) Trials and triumphs of the surgeon. N. Y. M. Jour. Apr. 10, 1915. One of the most brilliant, witty and thoughtful essays ever contributed to medical literature. No one at all interested in medicine, or in surgery, especially, can fail to read this incomparable document without intense enjoyment and profit.

Bleak House, because it would do 'as well as anything else.' Some, most worthy men, fail because of pure ill luck and are elbowed out of every opening and never gain credit for any of the good things they do."

Continuing in his inimitable way, DaCosta says:

"Some years ago, after reading Paget's figures, I undertook an investigation as to why men leave the profession, as so many do. I found the reasons various. Some complained they got no help from the profession. Such men are like an electric button and won't do any work unless they are pushed. Others groaned that they had no pull, evidently believing that their great abilities would have burst into effervescence had a kindly bar-keeper been adjacent to open them. Others asserted that they were persecuted. As a matter of fact, when a man becomes an embodied grievance there is generally something wrong with him. Some did not reach they top because there was no elevator and they were too lazy to climb there. They preferred sitting at the bottom and complaining. Such men work like a sun dial on a dark day, and move like a glacier. Some failed because what they did not know about medicine would populate a collosal morgue; some, because they were so busy attending to other people's business they could not find time for their own work."

The reason for all this is that youths know little or nothing of their own minds. Their real fitness or unfitness for a given profession is only discovered after they have plunged into it too far to retrace their steps and make their way back to safety. Again with DaCosta:

"When we think of how many men fail, we naturally wish that there was some infallible method by which we might recognize the unfit when they seek to begin study, or at least very early in their student days. To do so would be good for medicine and for the men themselves, such men are not labeled like reserved seats, or brandy bottles, or boxes of cigars. To make a mistake and admit the unfit man, would wrong medicine and the man. To make a mistake and exclude the fit man, would wrong the man and medicine."

Now, I say that the trouble in handling such men is a trouble in eugenics. It begins at birth,—it begins long before birth; it begins in the ancestral traits of the germinal cells. It is largely a problem of heredity which is at present insoluble and, for present purposes and the conditions existing in our social organization, utterly unfathomable. All that we can do is to require certain proofs or tests of common intelligence, of capacity for remembering or acquiring facts and for school training, or a certain amount of preparatory knowledge that is indispensable for some understanding of the things that are peculiar to medicine.

Up to the recent past, the tests that we have had to depend upon largely, are examinations. These, however, are only tests of the student's memory of facts and to some extent also for his attention. But they are no tests of the man himself. They tell nothing of his judgment, tact, energy, enthusiasm, idealism, reason, powers of observation(which are so essential to the medical man). "They tell us nothing of the man's temperament, his disposition, his honesty, loyalty, courage, truthfulness or capacity to grasp the real problems of professional life. Memory for facts means little, the other things mean nearly all."

Again, quoting the picturesque and vivid language of DaCosta:

"The graduate is like a sausage; that is, he is whatever comes out of the machine. I submit it that the purity, flavor, healthfulness of sausage depend upon what goes into the machine. Seasoning won't do everything, although some teachers agree with Sam Weller's friend, the meat pie man, who said it was 'all in the seasoning'."

This is the great problem that is now confronting the world's educators, who are entrusted with responsibilities of educating and training the professional man, and who realize that the most urgent need of the moment is a test, a means, by

which a man's fitness for his specific and lifelong vocational career may be determined before he is admitted within the gates of the temple in which he is to worship for the rest of his days. We have advanced far enough in our methods of teaching medicine to know that at the end of a certain period of probation we may be able to place some valuation upon a man's intelligence, his interest and his aptitude for progress in the pursuit of his professional career. But this is information that is, at best, limited to certain qualifications and is obtained too late to save the student who has failed, from great economic loss in time, money and disappointment. Yet, even then, in spite of the discouragement attending such a discovery, it is a boon to the student to be spared further losses and fruitless endeavors and to be given an opportunity, though belated, to display whatever he may have in other directions. The conditions now existing in medical education,—the exacting entrance requirements, the graded courses, the limitation of the number of matriculants who may be admitted into the schools, the development of laboratories in which the teacher comes in individual contact with the pupil, and in which an opportunity is given to become familiar with the student's personality and, to a considerable extent, with his character,—are all tending to a more discriminate selection of the candidates for the medical profession, and are conducive both to the elimination of the undesirable and the conservation of the fit.

But far and above all the opportunities given to the observer of the present day for the proper gauging and prognosticating the future career of the individual student, is the record of his conduct and work and the stamp left by his personality in the hospital. It is the experience of the junior and senior interne years (now postgraduate) that is most likely to forecast the story of the future. It is in the hospital, with its daily and hourly contacts with his Chiefs and his environment, in the discharge of of his duties at the bedside and elsewhere that the real make-up of the man is revealed. His mental attributes, his inclinations, his earnestness, his knowledge, his industry, his honesty, his temperamental and innate traits, his personal characteristics—, in fine, his character,—or the lack of it,—and his prospects, are all projected and made manifest to all who care to know him, by the time he has completed his term of service.

In this way, we dare say that if a comparative estimate of the number of failures, so depressingly numerous in Paget's time, could be contrasted with the qualifications of the graduates of American and British medical schools of the present day,—even since DaCosta's pungent criticism in 1915, the number of failures would have appreciably diminished and the proportion of professional successes would have notably increased. There is no doubt that men who go through the prescribed courses in modern medical schools,—in this country, at least,—have infinitely better prospects for success and usefulness than were given their predecessors. However, no matter how thorough may be the process of selection or how vastly superior the technical equipment and the conditions which surround the medical students of today, the conclusion reached by Sir James Paget more than half a century ago remains as true now as it was then, and will probably continue to be for generations to come. And it is this chief conclusion that I wish to impress upon you today,—namely: "Nothing is more certain than that the *personal character*, the very nature, the will, of each student, has far greater force in determining his career than any help or hindrance whatever. That any student may draw from his daily life a very likely forecast of his life and practice, for *it will depend upon himself, a hundredfold more than on circumstance.* The time and the place, the work to be done and its re-

sponsibilities, will change, but the man will be the same, excepting in so far as he may change himself."

This is a fundamental truth that no thoughtful teacher can fail to recognize as indisputable. But, granting all this and that the man himself, through his congenital or inborn qualities, is the chief arbiter of his own destinies and the greatest determining factor in his success or failure, it is none the less true that intellectual and other habits acquired by the student in the early formative periods of his life and through his environment at school, his associations at college or university, profoundly modify his course for better or worse in his later life.

To sum up then: What is it that makes most for success in life and for the pursuit of happiness in the vocation which you have chosen for service to yourselves and to your fellows? What is it?

In its essence, it is all reduced and compressed in one word,—and that word is *Character;* and by character we mean the sum of all those traits which a man displays in his mental makeup that stand for the principles of right living. I again lay stress upon this word, because of its supreme significance at this period of your lives and at a time when you will be beset by innumerable temptations of the most alluring kind, that will be put in your path to clog your footsteps or lead you into thorny roads, which will tear your flesh, yet hold you in embrace, and from which you will find it difficult, if not impossible to extricate yourselves.

Remember that *character* is what a man *is*, not what reputation considers him. *Character is one's intrinsic value*, not his value in the market of public opinion. It is not learning; it is worth. "Character is greater than intellect. How many brilliant intellects about us are besmirched by faults and vices so gross that they have fallen from their high estate and now none so poor to do them reverence." Someone has said, "everyone is in duty bound to aim at reaching the highest standards of character; not to become the richest in means, but in *spirit;* not the greatest in worldly position, but in *true honor;* not the most powerful and intellectual, but the most *truthful, upright* and *honest.*"

One thing is certain, and that is, no man can be in any professional, civic, or ethical sense a good doctor unless he is also a *good man.* But, apart from all abstract questions of what constitutes individual morality, and without discussion of the fundamental qualities of respectability and decency, which presumably come with a healthy, clean inheritance to every individual, it is especially important that a student of medicine should be told, or at least warned, that if there ever was a necessity for holding and living up to a clean moral code, such an appeal could at no time be more opportune than it is at the present moment. Under the stress of contemporary social unrest and the tendency to the radicalism, skepticism and iconoclasm that everywhere prevail; with the social strata honeycombed with the all-pervading spirit of graft, and in the presence of an aggressive competition in an overcrowded profession (there are 148,665 M.D.'s in the United States and dependencies, according to the Directory of the American Medical Association, 1925); and, again, with the unavoidable infiltration of our ranks with a large percentage of moral defectives, perverts and degenerates, fastened as parasites on our professional body and breeding the foul saphrophytes known as the quack, the shyster, the grafter, the fee splitter, and so many other disgusting variety of the genus, flourishing in every rank of society,—we have reason to seize the *first* opportunity and *every* opportunity to warn and prepare you for your unavoidable contact with these pestiferous evils.

The Scriptures have declared: "That whatsoever a man soweth, that shall he

also reap." "Wherever you sow a thistle or a thorn, you will also reap thistles and thorns; wherever a wind is sown, a whirlwind will be reaped, while the sweeter seeds sown by others, will be yielding to others sweeter fruit."

I have referred to *character* as the keynote to success in life, and I mean this for you, young men, who are aspiring to be practitioners in medicine. Few, if any of us, can hope to attain a perfect character, but each should aim at the ideal and, at least, endeavor to cultivate the good that is in him, and seek to control or supress the evil tendencies that are inherent to all flesh. The traits of a perfect character, as they have been drawn up from the sum of human experience by high authority,(10) are stated to be: (1) *Fortitude;* valiant, steadfast, and uncomplaining. (2) *Courage;* with a stout heart. (3) *Heroism;* faithful unto death. (4) *Contentment;* sunshine of the soul. (5) *Ambition;* looking to the heights. (6) *Perseverance;* unceasing effort. (7) *Self-respect;* standing upright. (8) *Purity*; with clean hands. (9) *Self-control;* holding a tight rein. (10) *Self-reliance;* trusting one's self. (11) *Unselfishness;* large hearted. (12) *Obedience;* loyalty to duty. (13) *Sympathy;* the friendly hand. (14) *Consecration to duty;* self devotion. (15) *Usefulness;* good for something. (16) *Industry;* never idle. (17) *Truthfulness;* straightforward and honest. (18) *Courtesy;* the true gentleman (19) *Comradeship;* a fellow feeling. (20) *Amiability;* gentleness. (21) *Patriotism;* love of country. (22) *Justice;* rendering what is due. (23) *Patience;* the gentle conqueror. (24) *Temperance;* within bounds. (25) *Imagination;* pictures of the mind. (26) *Habits;* beaten paths. (27) *Fidelity;* holding fast. (28) *Determination;* accepting responsibility. (29) *Hopefulness;* faith and enthusiasm. And the sum of all these traits is *Character.*"

Some time ago, many of us were impressed by an extraordinarily beautiful moving picture which was exhibited in this city under the title of The Ten Commandments. This remarkable production was designed to awaken and rekindle the slumbering fire of righteousness in the weakening hearts of the men and women of the modern world. Whether the tablets of the law were inscribed by the lightning of Jehovah amid the thunder of Sinai, or whether they can be traced to human origin, is not for us to question. Suffice it, that the decalogue remains an inspired and imperishable code for the moral guidance of mankind. To obey and observe the commandments and live up to them, depends upon the conscience of the individual, the living spark of which is embodied in the word, *Character!* It is this thought that has prompted me to dwell upon this spiritual and fundamental phase of your careers.

"Take these thoughs with you for the year;
Go down the Valley with your brothers
And work them out in life."

And now, my dear internes, all my friends, and especially to those who have so deeply attached themselves to my affections for their unfailing helpfulness, faithfulness, earnestness and cheerfulness in the discharge of their duties in the service of this generous and merciful institution, I would commit you to your future with the heartiest "God speed" and wish and hope of your chiefs that the new paths you are about to tread may lead to the summit of your aspirations, to your happiness and glory.

Then let us be up and doing
With a heart for every fate.
Still achieving, still pursuing,
Learn to labor and to wait!"
(Psalm of Life.—Longfellow)

(10) See James T. White: Character lessons in American Biography. Nat. Cyc. Am. Biog., Index and Conspectus, N. Y. 1906.

THE CHOICE OF AN ANESTHETIC*

L. S. BROWN, M. D.,
WATER VALLEY, MISS.

In the choice of an anesthetic one is sometimes helped by a previous history to avoid the drug, which has made the particular patient sick on a previous occasion.

Generally speaking when nitrous oxide-oxygen alone is sufficient for the surgical procedure it is by far the most likely to give freedom from after-sickness. It provides no such immunity when ether has to be added in the course of the operation.

Short operations under ethyl cloride are rarely followed by sickness or nausea of any length of time, though they often are by headaches.

So far as the anesthetist's part is concerned in preventing nausea, during anesthesia the following rules will help:

1. Maintain free mouth breathing.
2. Avoid cyanosis.
3. Prevent swallowing of mucus or blood in operations when this enters the mouth.
4. Keep the amount of anesthetic given within the lowest limit compatible with perfect anesthesia.
5. Do not let the patient regain consciousness before he is back in bed, and see that he is moved gently. When in bed the patient should lie partly on his right side with head on pillow till consciousness has fully returned, after this the Fowler's position can often be adopted with advantage.

Patients who breathe through the nose under the anesthetic and particularly those with posterior obstructed nasal passages are more liable to nausea and vomiting than those to whom the mouth is kept well open throughout anesthesia. These patients with deficient nasal air passages and high pharyngeal vaults are more likely to suffer from nausea after ether. I believe that a combination of anesthetics are safer and better than any one agent used alone.

I am partial to the *Gwathemy* Apparatus put out by the Foregger Company of New York. I believe its advantages over the Clark, McKesson, Heidbrink, Ben Morgan and other machines on the market is its simplicity and sight feed and can easily be checked up at a glance.

Its principles are as follows:

"1. There must be absolutely regular flow of gas at any rate desired without the necessity of frequent valve manipulations.

2. The flow of the gasses must be rendered visible so that their proportions can be approximated at a glance.

3. An efficient method of adding ether vapor, gradually yet rapidly up to any amount, that even an extreme case may require, must be available.

4. The face piece must be so modified as to be absolutely air tight, and practically self retaining."

The advantages of nitrous oxide-oxygen anesthesia has over ether, are no nausea and vomiting, less shock and fall of blood pressure, it should be the anesthetic of choice in all emergency operations. All minor operations can be done successfully under nitrous oxide-oxygen anesthesia, and in fact any operation by the addition of ether vapor, if the patient is not sufficiently relaxed.

In any operation over 1 hour the addition of ether is necessary, and in fact the administration of nitrous oxide-oxygen without the use of ether in long operations is dangerous.

That nitrous oxide-oxygen needs reinforcing is shown by the fact that ether

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containers are attached to all makes of apparatus.

Unquestionably the patient's condition is better after the administration of nitrous oxide-oxygen with small amount of ether (1 to 4 drams) than when saturated with ether.

We can abolish the use of ether, and get the same relaxation by using magnesium sulphate with morphine as a preliminary. By this method we obtain a safer form of anesthesia, with equally good relaxation and with less nausea, vomiting and depression. 1/8 gr of morphine in 1 or 2 cc of a 25 0/0 solution of chemically pure mag Sulp. 1 Hypo of this mixture will relieve pain from 10 to 30 hours as com pared with 2 to 4 hours with sterile water.

All alcoholic and hysterical patients are best anesthetized with nitrous oxide-oxygen as they take ether badly. I have administered nitrous oxide-oxygen successfully in thyroid, acute and chronic appendicitis, hernia, gall bladder, hysterectomy and many other operations.

In conclusion nitrous oxide-oxygen is the anesthetic of choice in the hand of an experienced anesthetist, and by the addition of small amount of ether vapor can be used in most abdominal surgery. Ethylene because of its explosive nature is not as safe as nitrous oxide-oxygen. Ethylene in the presence of oxygen forms an explosive mixture when brought in contract with a free flame. Several explosions have occurred from a static spark resulting from contact. The odor is usually considered to be unpleasant. At the present time it seems the most important advantage in this form of anesthesia is an advertising one. Patients want the newest.

Ethyl chloride is a very dangerous anesthetic and should be administered only by persons who have been carefully trained. The slight amount of comfort obtained for patients is purchased at too high a risk unless given by a skilled anesthetist.

Ether in long operations produces a certain amount of nausea, vomiting and shock. It is possibly more used than any anesthetic today. Chloroform has practically given way to ether. It is still used in obstetrics. It should not be given in acute sepsis, particularly of the abdomen because of the risk of acidosis. The Gwathmey apparatus is used in most of the large hospitals, and in my opinion is the best on the market today. In choosing an anesthetic the following points should be considered:

(a) The safety to life.

(b) The condition for which the operation is to be performed.

(c) Careful history and physical examination of the patient.

(d) The surgeon's likes and dislikes.

(e) The length of operation and the anesthetic that will give the patient the less shock and nausea.

(f) The applicability of other anesthetics to the patient, whose size, age, habits of life and conditions at the time of operation must be considered.

No set rules can be laid down for the selection of the anesthetic, for the method of its administration or for the time of changing from one anesthetic to another. This must be learned by experience and the anesthetist must know the physiological effect and the dosage of each drug that is used.

References: Anesthesia by James Taylor Gwathmey, M. D., 1925.

INSULIN AND DIABETES MELLITUS.

H. L. RUSH, M. D.,
MERIDIAN, MISS.

Since the discovery of insulin, diabetes has probably been subjected to more intensive study than has been accorded it during any other period of its long history. Clinicians have long recognized the extent of the menace that this condition represents. Besides the death of a small army of persons each year from diabetes, there is a further great army of otherwise healthy persons who are incapacitated by it.

STATISTICS.

Statistics reveal the fact that in Boston and New York, one death in sixty is due to diabetes. Tuberculosis as a cause of death has dropped from first to fourth place and diabetes has risen to tenth. In the registration area of the United States in the last forty years there has been a change from 2.8 to 16.1 in the death rate from diabetes per hundred thousand of population, while the death rate from all causes has fallen steadily during this period.

HISTORY.

A review of the literature reveals the fact that the word diabetes has undergone many changes of meaning. The disease was known to Celsus. Aretaeus first used the term diabetes, calling it a wonderful affection, "Melting down the flesh and limbs into urine." It was first employed simply to denote polyuria. In 1679, Willis described the sweet taste "As if there had been sugar and honey in it," but Dobson in 1776 demonstrated the fact that the sweetness was due to the presence of sugar. Nearly twenty years later Frank differentiated between diabetes mellitus and diabetes insipidus.

Von Mering and Minkowski showed many years ago that extirpation of the pancreas in dogs was followed by glycosuria. It was known that the islands of Dangerhans in the pancreas show pathologic changes in persons dying of diabetes mellitus. It had already been shown by previous investigators that when the ducts of the pancreas are tied off the acinous tissue degenerates more rapidly than does that of the islands of Langerhans. With this in mind Banting conceived the idea of preparing an active extract of the islet tissue. Insulin was the result.

ETIOLOGY.

There are several theories as to the origin of diabetes. There are those who believe that clinical diabetes invariably arises on a basis of pancreatitis, and that the fundamental defect is a consequent inability to utilize carbohydrate. Glycosurias of non-pancreatic origin are in a class apart, having no relation to true diabetes. They base their view on the evidence that histologic examination has shown morbid changes in the islands of Langerhans in patients dying of diabetes; and that characteristic features of the disease can be reproduced in animals by excising the pancreas. Few, if any, at the present day, will deny that defects in the functions of the pancreas play an important part in the pathology of diabetes; the only question is whether they are the primary and the essential basis on which the disease develops, or whether they may, in some cases at least, be secondary and supervene in the course of the evolution of the final condition.

Others, including Cammidge, believe that "Diabetes mellitus is a symptom complex characterized by an excessive production of sugar which originates in a variety of ways and develops along converging lines to a common final stage in which all the metabolic functions of the body, incluidng sugar utilization, are more or less disorganized." Clinical diabetes is probably not of constant pathology or etiology. It may be a symptom complex originating in various ways, and eventually giving rise to a progressive deficiency of the pancreatic internal secretion if the primary cause is not

*Read before the Mississippi State Medical Association, Biloxi, May 12-14, 1925.

controlled. Many of the functions of the body have been found to represent the outcome of an interplay of antagonistic actions resulting in equilibrium. This is exemplified in the almost constant composition of the blood, despite the additions and withdrawals to which it is continually subjected. Howard has conducted experiments showing that a thyroid-epinephrin combination promotes the breaking down of glycogen into sugar, and that a parathyroid-insulin combination has an opposite effect. Nichols and McCann found that insulin and epinephrin had opposite effects on the blood sugar. Burn has shown an antagonism between the harmones of the posterior lobe of the pituitary gland and insulin. Clinically, epinephrin and pituitary extract are employed to counteract the effects produced by the introduction of an excess of insulin into the circulation. Moehlig and Ainslee very recently have demonstrated by experiments that posterior pituitary extract injected into normal rabbits produces as a rule a slight rise in blood sugar, and that the same when injected simultaneously with insulin prevents the fall produced by the latter. Weinberger and Holzman have reported a small series of cases in which they cite a reduction in blood pressure produced by the administration of insulin, and suggest the hypothesis of an antagonistic action between the harmones of the pancreas and suprarenal glands. All of this tends to show that there is possibly some co-operative way in which the special organs are concerned to cause the familiar insulin effects. Clinical experience has taught that certain cases of diabetes are benefited much less by insulin than are others, even when conditions as to diet, age, and general health are taken into consideration.

It is possible, therefore, that diabetes may arise from other causes than pancreatitis, even if we agree to define diabetes as a condition in which an insufficiency of the pancreatic internal secretion is associated with defects of metabolism. I agree with Cammidge, and it has been my experience, that the cases of diabetes that we see today can be divided roughly into two classes: 1. A rapidly developing form of diabetes, encountered in young people, probably due to an absolute deficiency of the pancreatic internal secretion. 2. The more slowly progressing types seen especially in the later years of life, in which an intermittent glycosuria becomes persistent and secondary disturbances of metabolism gradually develop.

USE OF INSULIN

Although scarcely three years have elapsed since insulin came into use, its value in diabetes has become thoroughly established clinically as well as experimentally. It has been found to be of inestimable value in the control of serious acidosis, in the treatment of diabetic coma, and as a prophylactic in surgical procedures. It has restored health and strength to those who were helpless previously, and prolonged life and made it much more enjoyable. However, it should be borne in mind that insulin, apparently, does not cure diabetes. It is a much debated subject as to its possibilities. Some believe that insulin merely supplies something that is lacking in the diabetic patient, and that cessation of insulin treatment leaves the patient in the same condition as he was before. They have reported cases to prove that the carbohydrate tolerance was not raised. Others, however, are of the opinion that some patients show improvement in tolerance following a period of insulin treatment. I have in mind a young man whose daily dosage of insulin has been reduced from 65 units to 10 units during a period of six months. Naturally one would expect recuperative powers to be greater in youthful patients than in the old, but unfortunately, young persons with diabetes are notoriously unreliable in respect to diet.

Insulin should not be given indiscriminately to all cases of glycosuria. We must recognize that there are cases of renal glycosuria which are not diabetes at all and do not need insulin. Furthermore, diet alone is sufficient for a large proportion of diabetic patients in advanced life, and insulin is not needed. Its administration may become a necessity that extends not merely over days or weeks but even over years without interruption. Therefore, the necessity of introducing the hormone into the body becomes a problem of real seriousness.

COMPLICATIONS WITH INSULIN.

Naturally we are all familiar with the classical signs and symptoms of overdosage with insulin which means depletion of the immediately available carbohydrate, and promptly relieved by sugar intake. These include pallor, rapid pulse, dilatation of the pupils and profuse sweating which are indications of discharge of sympathetic impulses. But there is another condition, more in the nature of an end result, which has attracted some attention among the profession and considerable concern among the patients. I have reference to generalized edema following desugarization of the urine with insulin therapy. Gibson and Larrimer have recently reported five cases seen in their clinic. I have had three cases during the past year in which this annoying effect of insulin control was observed, and in each instance the administration of potash salts or large doses of calcium caused a disappearance of the edema. The phenomenon is an extremely interesting one and I do not know that anyone has explained it satisfactorily It may be possible that the patients who react in this manner are those who are undernourished and that the edema is of the same character as that which we used to see in patients who were treated by badly adjusted dietary methods before we had insulin. Some have suggested that the edema induced by insulin is due to incomplete removal of proteins or other substances from the insulin at the time of preparation. Others hold that it is due to an increased affinity of the tissues for water due to dehydration of the tissues by the polyuria. John recently reported a case in which diabetic coma was complicated by acute retention of urine associated with low carbon dioxide values and edema of the tissues. It may be possible that the edema is due to a combination of these factors producing a faulty salt metabolism, the chief factor being the cation sodium.

CASE REPORT.

I present the following case report to illustrate this condition: S. E., a girl, aged 23, weighing 124 pounds, was admitted to the infirmary January 28 in a condition of diabetic coma due to discontinuance of insulin treatment and abandonment of proper diet. The breath had a heavy odor of acetone and the respiration was labored. Blood sugar content was 330 mg. per hundred cc. Blood pressure was 93 systolic and 55 diastolic.

Consciousness was restored in thirty-six hours following the administration of glucose and 185 units of insulin during this period. She then received an average daily dose of 50 units of insulin for six days: at the expiration of which time, February 5, the blood sugar returned to 135 mg. per hundred cc., and the urine became sugar free. Insulin-Lilly, H-20, was used throughout. There immediately developed an extensive edema of the feet, ankels and face. There were no insignificant cardiac or renal disturbances, and the urine was free from acetone and diacetic acid at the time the edema developed. 10 grains each of potassium bicarbonate and potassium chlorid were given with meals and salt withheld as recommended by Gibson and Larimer. Within 2 days the edema had apparently entirely disappeared and there has been no recurrence. The patient was discharged February 10, receiving 35 units of insulin daily and on a diet of carbohydrate, 49 gm., protein, 73 gm., and fat, 160 gm., totaling 1928 calories.

CONCLUSIONS.

1. Evidence suggests that clinical diabetes is not a disease of constant etiology or pathology, and that it may arise as a symptom complex from other causes than pancreatitis.

2. Insulin should not be used indiscriminately in all cases of glycosuria.

3. Generalized edema occasionally occurs following desugarization of urine with insulin.

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THE SIGNIFICANCE OF EARLY DIAGNOSIS OF DIVERTICULUM OF THE ESOPHAGUS.*

CASE REPORT.

A. L. LEVIN, M. D.

NEW ORLEANS.

In presenting this subject, I have in view the message delivered by Dr. Chas. H. Mayo at a meeting of the Southern Surgical Association in 1922 at Memphis, Tennessee. He then remarked, "Diverticulum of the esophagus, a disease of adult life, is more common than generally realized. If it was regarded as not uncommon, those causing symptoms might be discovered early when the sac is small, or at least before it becomes intrathoracic." Such advice was intended for all students of medicine. The case to be reported was overlooked for at least four years, probably for a longer period. Judging from the history of the case, the trouble existed probably in a minor degree for eight years, became aggravated in the past four years, worse for one year and intolerable for the past six months. Evidently, little attention was paid to two outstanding symptoms, namely: dysphagia with a sensation of a choking lump in the throat and regurgitation of food for hours, mostly at night, which caused insomnia and exhaustion. A review of the literature on the subject will probably be of interest.

Before the use of the X-rays, facilities for recognition of an esophageal diverticulum were lacking. Bell in 1830, Rokitansky in 1884, Kluge in 1850, Zenker and Ziemssen in 1881, describe the classification and surgical treatment of esophageal diverticulum. The true esophageal diverticulum was first described by Ockonomides, (1882). There has been practically no pathological anatomical research work done. Ockonomides described the post mortem of an 83 year old woman. It was 8½ cm. above the cardia with a constricted opening and a protruded sac of 6 cm. diameter. Bresch dissected a 67 year old man with a pulsion diverticulum 3 cm. above the cardia, whose walls contained muscle fibres, but was not adherent to any place. Prczewaski found diverticula seven times in the lower third of the esophagus, all of which were entirely free from adhesions. Virchow found one post mortem case which showed a diverticulum immediately above the cardia. Bychowsky was the first to diagnose a case of epiphrenic diverticulum. This was the only case for a long time and it was mentioned in all text books as a new form of disease. Fourteen years later, Dr. Spivis of Central America diagnosed it as spasm of the cardia and dilatation of the esophagus. In 1894 Kemperer reported a doubtful case; later on, the report of Zweig's case was a traction diverticulum, 27 cm. from the teeth. The patient had tuberculosis and was treated by artificial pneumothorax. Prior to 1917, there had been 25 cases of this condition diagnosed in the Mayo Clinic, while in that year there were 10 more. The German article on this subject for 1924 mentions that so far a total of 21 cases have been described.

Definition. Diverticulum means a circumscribed dilatation.

Occurrence. It is more common in men than women, the ratio being about four to one, and in those who have artificial teeth.

*Read before the Orleans Parish Medical Society, New Orleans, December 14, 1925.

Classification and causative factors. Diverticula are divided into pulsion and traction diverticulum, according to the factor causing it, pulsion or traction. Zenker's pharyngoesophageal diverticulum is the type. It is usually called by the name of the part in which it is found. It occurs most frequently at the entrance to the esophagus between the pars obliqua and pars fundiformis. They also occur along the whole esophagus between its beginning and cardia, and are called epibronchial or epiphrenic, according to their position above the bifurcation of the trachea, or above the surface of the diaphragm. The epibronchial diverticula, located in the middle part of the esophagus are traction or traction-pulsion diverticular; they are caused by external tension, such as adhesion of surrounding tissue which have shrunk away and formed a pouch at the point of adhesion. Pressure from within later on enlarges the sac, so that it becomes a traction-pulsion diverticulum. Inflammation of lymph glands will often act as a factor. Secondary pulsion diverticula may develop from any scar tissue in the esophagus wall which may present a locus minoris resistentiae. In organic stenosis, a diffuse dilatation of the esophagus usually develops. None of these forms should be confused with the true pulsion diverticulum. Both forms have characteristic properties in common, such as distance from the teeth, and the occurrence over a smooth annular muscle capable of spasmodic contraction over the cardia and over Killion's esophageal mouth. It seems very probable that the pressure of food upon a congenitally weak part of the muscles causes a rupture between two layers when the muscle is spastically contracted and a mucous "hernia" is produced, which is gradually enlarged by pulsion. Small diverticula may consist of mucous membrane, while larger ones also have muscular tissue in their wall. The increase in size of the sac is also caused by the negative pressure on the inside of the thorax. Another favorable condition for the beginning of such a diverticulum is the swallowing of large insufficiently chewed chunks of food by toothless individuals and rapid eaters. A diverticulum breaks through the posterior wall of the esophagus and presents a mouth and a sac. The sac can only increase in size towards the right, the back and below, because the vertebral column is behind and the heart and the aorta are in the way in front and to the left.

Fig. 1. Aesophageal Diverticulum immediately after barium was given.

Size. The volume of the sac varies from 100 to 300 c.c. Reichman reported a case with a volume of 500 c.c.

Symptoms. The history is usually one of long existing trouble, and the phenomena are at first those of irritation, later on of stenosis and finally pressure symptoms develop, when it becomes a serious sickness. At first, the patient may present symptoms of cardiospasm. After some time, the patient has occasional difficulty in swallowing. He feels as if a mouthful of food lodges in the esophagus, pain may be present. The dysphagia increases and regurgitation of food or vomiting ensues. The food is usually the kind eaten hours or days previous. Gastric and cardiac disturbances with insomnia cause loss in weight and general weakness.

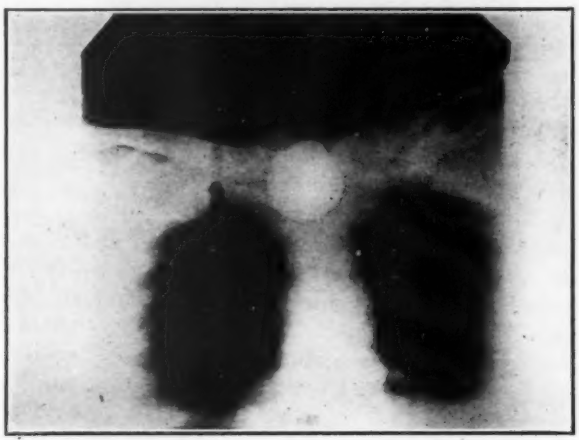

Fig. 2. Aesophageal Diverticulum, 3 to 6 hours retention.

Diagnosis. A history of that kind is sufficient evidence to suspect a diverticulum of the esophagus. The radiologist in this instance is 100% perfect.

Treatment. Bassler writes as follows with regard to treatment: "Small diverticula which cause no trouble might best be left untreated. When they are large enough to cause symptoms, they are operable cases." Feeding through a tube may be practiced as a preparatory step to operation, which is quite a serious matter. Rectal feeding may be employed, nourishing liquid food in small quantities should be given. Washing of the esophagus is a good palliative measure.

Case Report. The following case came under my observation October 20, 1925. C. K., male, age 64, retired merchant.

Chief complaint. For the past 4 years he noticed that often he has difficulties in swallowing food, that he had to take water frequently with meals. The condition become aggravated during the past year. He began to suffer with choking spells which would come on mostly towards evening or sometimes at night; that after taking food, he experiences a feeling as if the food collects in his throat behind the upper portion of the sternum; that he cannot go to sleep until a quantity of food which he has eaten during the day is regurgitated either involuntarily or in a mechanical way by drinking quantities of water. He wakes up sometimes during the night with a choking sensation.

Previous personal history. Eight years ago, he suffered from a nervous breakdown following the death of his wife. He recovered after a rest of two months. From that time on, he began to suffer with indigestion manifested in the following manner: Pain in the lower abdomen off and on, cramplike in character, which would last for about 24 hours. Chronic appendicitis was suspected. Four years ago, he suffered an attack of acute abdominal pain with temperature. He was admitted to a local hospital where an X-ray

diagnosis of chronic cholecystitis probably with stones was made. Surgical intervention was advised, but he refused. Several years ago, he developed precordial pain and slight dyspnea on exertion and was treated for heart disease for over one year.

Family history. Father died at age of 67, mother at age of 72; cause of deaths not known. Three brothers. One died at age of 11 from dysentery, one died at age of 45 from cancer of throat, one died at 57 from stomach trouble. Two sisters living; three dead, causes unknown. His first and second wives died of cancer of the uterus and breast.

History of present illness. In the last several months, his throat condition became intolerable; he could not sleep on account of vomiting quantities of tenacious mucus mixed with food. He would suffer from this more at night than during the day. He was treated for indigestion for one year and was getting constantly worse. He started to lose weight from lack of sleep and lack of nourishment and was in constant fear of choking to death.

Physical examination. Well nourished and well developed, weighing 202½ lbs. General condition good, skin clear. (Head and Neck—Artificial teeth, negative otherwise. Glands not palpable. (Circulatory system)—Pulse regular, good volume but easily compressible. (Heart)—Definite cardiac enlargement both ways, sounds are weak and distant, no definite murmur. B. P.—S. 120, D 80. Chest normal in shape. Lungs, moist rales of both bases. Abdomen—No sensitive areas, no palpable tumor. (Liver)—Palpable edge, especially on deep inspiration. Spleen not palpable. G-U system not examined. Patellar reflexes normal. (Urinalysis)—Spec. gr. 1008, acid reaction, cloudy, straw color, faint trace of albumin, no sugar, no indican, no bile, no blood. Microscopically—innumerable pus cells, epithelial cells, no casts. Gastric lavage was attempted but tube could not be introduced further than 18 inches. Vomited egg eaten the day before. Several days later, another attempt was made to enter the stomach but was unsuccessful. A week later a third attempt was made and at this time the tube entered the stomach. A quantity of fermented food was obtained. HCL was strongly positive. A diverticulum of the esophagus was suspected the first day of the examination and an X-ray was made immediately. The report is as follows:

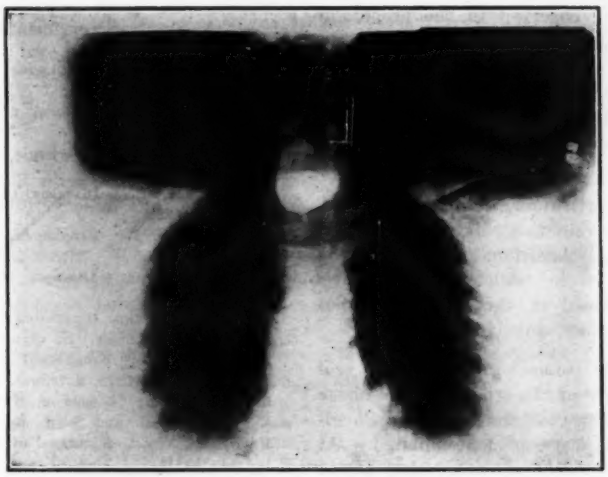

Fig. 3. Aesophageal Diverticulum, 4 days retention.

Esophagus—There is a large pear shaped diverticulum of the esophagus at the level of the 7th cervical vertebra. Its position is in the midline posteriorly. The lumen opens into the esophagus at the upper point of the diverticulum.

Stomach—Filled normally under fluroscope.

Duodenum—Filled and emptied normally.

Caecum—Normally filled. A large irregularly filled appendix is noted, tender on palpation.

Colon—Spastic.

Conclusion. Diverticulum of the esophagus.

Patient was put immediately on liquids. The regurgitation of food, the choking sensation and vomiting of mucus ceased. A small thread was swallowed and it passed through the intestinal

tract in four days. Dr. Rudolph Matas was called in consultation to consider the advisability of surgical intervention. Esophagoscopy was done by Dr. Lynch with the following results: The esophagoscope entered the sac which looked granular and red. There were evidences that the sac is adherent to outside structures. The esophageal opening could not be easily located.

Blood Chemistry: Total N.P.N. 35.1; U.N. 17.5; C. 1.5; Uric Acid, 4.2; Dextrose 106. Blood count: R.B.C. 5,200,000, whites 7,960; differential: N. 63, S. L. 30, L. L. 7, E. O.; P.S.T. 1-25%, 2-25%.

A second X-ray was made with the following report:

The barium meal was administered to the patient and opposite the upper dorsal vertebrae, a large saculation is observed in the esophagus which retains a large quantity of the barium. A. P. and lateral views of the chest present barium shadow in the esophagus, approximately the size of one dollar and the esophagus below this point appears normal. Marked hypertrophic arthritis is observed in the spine.

Conclusions: Diverticulum of the esophagus, with marked barium retention. Hypertrophic arthritis of the spine. Additional fluroscopic examination will be made with tube in place. Barium is still retained in the diverticulum of the esophagus after four days interval.

The history and the stomach tube gave the real clue to the true nature of the trouble in the above case. The X-ray was a confirmative step. Surgical treatment of the case is contemplated. At present, treatment consists of nourishing liquid food in small quantities, but often. The silk thread is probably of some value. The liquid nourishment enters better the esophagus along the silk thread. It was introduced mainly as a guide for the surgeon. He is perfectly comfortable; the regurgitation of food has ceased entirely, not even mucus is brought up. He sleeps all night. Following this plan of treatment, a second X-ray was made which shows definitely that the sac is smaller. The patient is so satisfied with this plan of treatment that he is questioning seriously the advisability of undertaking such a serious operation.

Conclusions. The lessons drawn from this case are:

(1) The importance of listening carefully to the patient's history of the development of his illness.

(2) The significance of adopting the use of the stomach tube more often.

(3) The vital importance of intelligent co-operation of the radiologist.

(4) Great emphasis should be laid on the value of esophagoscopy as an important diagnostic agent.

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DISCUSSION.

Dr. S. K. Simon (New Orleans): The X-ray has proved to be the greatest asset in the diagnosis, not only of diverticula of the esophagus, but of the entire gastro-intestinal tract as well. In the light of radiological findings in this field, diverticula of the alimentary tract, in fact, have been found to be of common occurrence. Diverticulosis of the stomach is rare, but the frequency of diverticula in the duodenum has been recounted and summarized in a recent article by Case and others. Again, in the large bowel multiple diverticula are by no means uncommon. A very excellent presentation of the last named type was given at the recent meeting of the Louisiana State Medical Society. The small di-

verticula of the large bowel play a minor role in clinical medicine, and are the outcome as a rule, of a prolonged state of constipation with the resulting strain upon the bowel wall. The larger diverticula of the bowel, such as the Meckel type, are probably always congenital in origin.

In the esophagus, as Dr. Levin states, there are two forms. (1) The form known as pressure diverticula. This arises at the junction of the esophagus with the pharynx, and occurs most commonly in males. In the advanced stages, the diagnosis of this type is not difficult. In most instances a tumorlike body makes its appearance on either side of the neck, gradually enlarges and may eventually reach considerable size. The original cause lies in a congenital weakness of the muscular stricture of the parts. As the individual advances in age, the weakened area dilates progressively under the pressure of respiratory strain. Excessive strains such as cough, playing of wind instruments, etc., hastens the development of the diverticulum. In many instances, the newly formed sacs never reach large size, and often remain unnoticed by the patient. Of course, when the diverticulum becomes tumorlike in dimension, and produces definite symptoms, as in Dr. Levin's case, they become decidedly pathologic. Their size may so increase that they subsequently obstruct the esophagus by pressure from behind. Apart from this possibility, the regurgitation of the swallowed food, the fetid odor of the breath, etc., are symptoms commonly noted, as brought out by Dr. Levin.

(2) The traction diverticulum which occurs usually at the level of the bifurcation of the bronchi. This is produced by the cicatrization of bronchial glands, as a result usually of tuberculous infection. The scar tissue results in traction upon the esophageal wall with the eventual formation of a new channel or diverticulum.

Treatment of the esophageal diverticulosis depends upon the size and the location of the lesions. Medical treatment is at best symptomatic, so that surgery offers the sole hope for cure. Traction diverticula are practically inoperable. Pressure diverticula on the other hand have been successfully handled by operation, especially if recognized early before they have attained too great a size.

The tumor in Dr. Levin's case occupies an unusual location in the midline of the neck, rather than upon the side. The one question I might ask of the doctor is why a guide thread is allowed to remain in the patient's esophagus permanently. Frequent dilatations with bougies certainly cannot attain any useful purpose under present circumstances, unless obstruction exists.

Dr. A. L. Levin (closing): I want to thank Dr. Simon for his very fine and valuable discussion of my paper. In answer to his question as to why I use the string in this case, I wish to state that the string is being used only as a guide, as per the suggestion of Dr. Rudolph Matas, who will undoubtedly have charge of the surgical side of the case. The string will be used as a guide to find the distal opening of the esophagus. A perforated bougie will be passed into the esophagus, and with the string as a guide the surgeon will be able to locate the sac easily. It can also be used at present as a guide to stretch the entrance at the distal end of the esophagus.

I have reported this case for the simple reason that the sac as shown in this case in the middle is rather unusual, as Dr. Simon remarked. As a rule the diverticulum is found on the side.

I wish to emphasize again the importance of taking a careful history of a case. In this instance the history and the stomach tube made the diagnosis, which was confirmed by the X-ray.

MONROE AND OUACHITA PARISH WELCOME YOU

The Ouachita Parish Medical Society in their invitation to the Louisiana State Medical Society, to meet in the city of Monroe at their annual session April 15-16-17th, 1926, did so after absolute assurance from the citizenship, of their hearty co-operation in the making of the moments spent with us, in this annual session for the Doctors in attendance, the most vivid experience of professional hospitality since the days recorded in mythological medicine—referring to the reverence everywhere accorded to the man of medicine.

The Ouachita Parish Medical Society invites you, together with the citizenship of Monroe, and since this is true, we feel that you would be interested to know something of the facts regarding our city, which is the second oldest in the State of Louisiana, and filled through legendary history with love and romance, from the days of our aboriginal population. With many places you can tell exactly when they first began, but with Monroe, this is not so. No one knows when the earliest white settlers came into this section of the State, but it is more than probable that the first to come were traders and trappers, who roamed and lived among the Indians and led the wild lives of pioneers, whose chief object was to buy from the Indians either skins or furs of bears, wolves and beavers.

The first authentic statement which we have as to a settlement here tells us of a trading post or camp at this point which was called Prairie Des Canots. It is supposed to have been so-called by the early French traders, because, this point being high enough to be above overflows, they could leave their canoes here and catch their provisions when they went off on their hunts or trading expeditions among the Indians in the surrounding country.

Another theory as to the settlement of this section is that the first settlements were made by refugees from Natchez after the fearful massacre of the whites at that place by the Natchez Indians.

History tells us that in 1783 Don Juan Filihiol, having received from Don Estovan Miro, Governor General of the territory of Orleans, his commission as Commandant of the district of Ouachita, embarked with his family and servants at New Orleans and made his way up through the Mississippi, Red and Black Rivers, into the Ouachita and finally came to this point. He was traveling in a bateaux, a kind of canoe, and necessarily the journey must have been very slow and laborious. He did not remain here very long but went up the Ouachita River to that place which we now know as Camden, Arkansas, but which was then called Echo A Fabry. It is said that he found the whole country along the upper stretches of the Ouachita River overflowed, and not caring to settle where such conditions existed, he turned and came back down the river until he again reached this place, and here he made his permanent settlement, giving it the name of Ouachita Post.

It is hard to realize that at that time, only 136 years ago, this whole section swarmed with Choctaw Indians and soon after Don Juan Filhiol made his settlement, the people or habitans, as these Frenchmen called themselves, begged of the Governor to build them a fort, claiming that it would give them an assurance of safety to feel that when they were off at their work, their women and children would have a place of safety in case of a sudden attack.

The Commandant made application to the Governor for permission to erect a fort, and in the records of our court house we find given complete details as to the structure, which was built, and its place of location. This fort was located between our present court house square and the river bank. It was rectangular in shape, having a frontage of 190-ft. and running back 150-ft. thus making a circuit of 680-ft. and inclosing within its limits a block

house as a place of refuge for the inhabitants and also the residence of the Commandant. All of this was inclosed by a wall made of white oak or cypress posts 12-ft. high.

Another old Act, or Ordinance, which was issued by Don Juan Filhiol, the Commandant, should be of interest to us as it is possibly the first effort of temperance or prohibition by law in Louisiana. The following is an exact translation: "Having examined the prayer of petitioners and having respect of justice of their petition, all persons are from this day prohibited to sell, exchange, give or make to drink, any strong liquor, of any character, to savages within the dependence of this post, under whatever pretext this may be. They shall be under penalty of $25.00 fine for the first offence, one-half of which shall be paid to the informant, the other half to the public works. On a second offence of the same kind, the offender shall be condemned to the same fine and driven from the post, being regarded in such case as a disturber of the public peace. Published at Fort Miro the 1st day of June, 1792. Signed, Filhiol."

By 1805 the fort was being no longer needed, seems not to have been preserved, and we find at this time, by an Act of the Territorial Governor of Louisiana, Fort Miro, as this place continued to be called was selected as the seat of Justice of the

County of Ouachita. In 1816 John Filhiol, then called, instead of Don Juan Filhiol, made a formal donation of the present court house square to the Parish of Ouachita, and this donation was formally received by the Parish Judge and police jury.

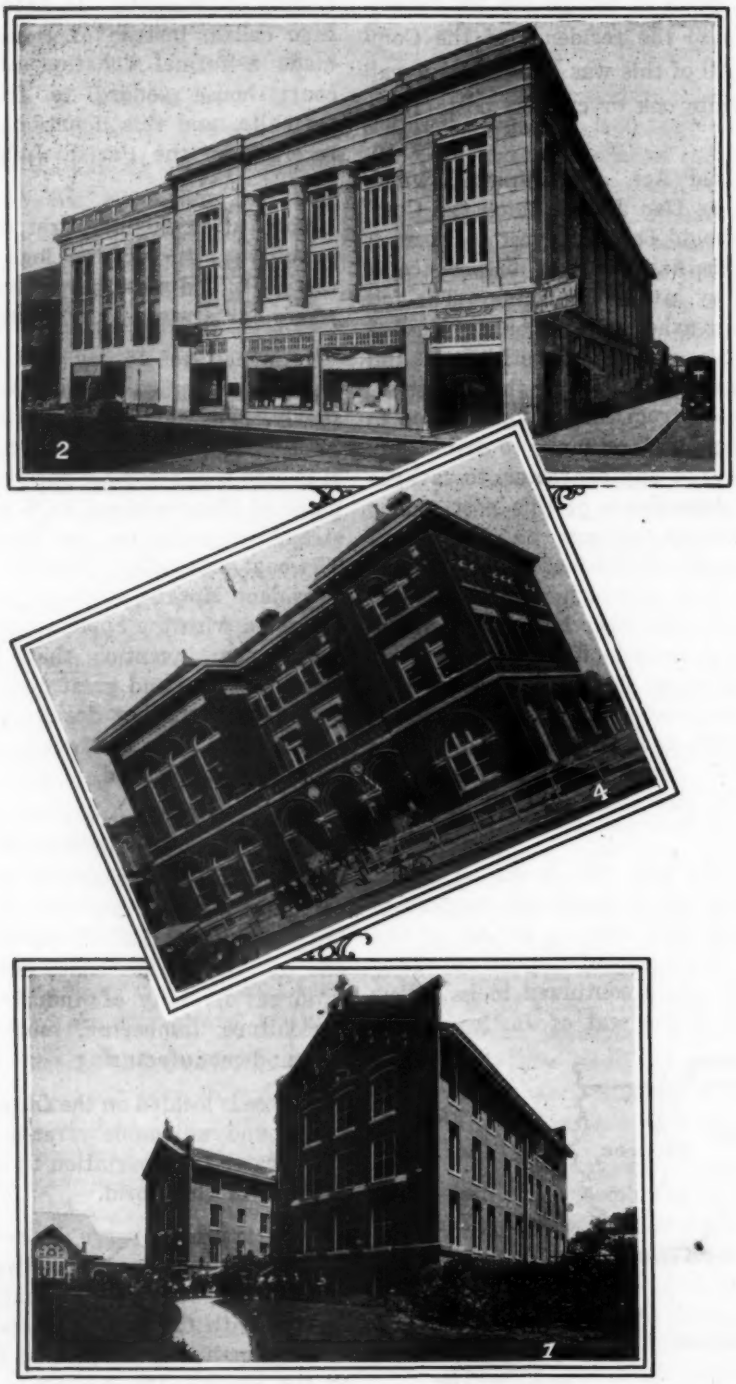
Soon after this the first court house, a primitive structure of logs and boards, was built, and must have stood very nearly where our present court house stands.

It is needless to say that the little settlement continued to live, but grew very slowly. The name gradually changed from Fort Miro to the Post, or town of Miro. It is said that the place received its present name of Monroe about 1819 when the first steamboat came up the Ouachita River. The boat was called "Monroe," in honor of President Monroe, and the people were so delighted with the appearance of this wonderful new invention that, after having attended a ball and great demonstration on board the boat, they decided to change the name of the town to Monroe, and so it has continued to be called.

Today finds Monroe a modern city. It is the largest city in central North Louisiana. The Parish seat of Ouachita and the community center and business hub of a large territory that it highly productive and one that is fortunate enough to have a large diversity of industries, namely, agriculture, lumbering, minerals, natural gas, and manufacturing.

Monroe is located on the Ouachita River, a year-round navigable stream, which provides water transportation to the ports and markets of the world.

Four railroads serve Monroe. Two of which are trunk lines, the Missouri Pacific, which runs North and South give connection with Chicago, St. Louis and cities of the North and the port of New Orleans on the South. The Vicksburg, Shreveport and Pacific runs East and West and connects with Texas in the West, and Birming-



Top—Masonic Temple. Center—Post Office.
Bottom—St. Francis Sanitarium.
Monroe, La.

Central Savings Bank and Trust Co., Monroe La.

ham, Atlanta, Washington and New York City. The Little Rock and Monroe, the latter a branch of the Missouri Pacific, runs through the gas fields into Arkansas, and together with the Arkansas, Louisiana and Missouri railroad furnishes most adequate railway connections.

Splendid motor highways link Monroe with the rest of the country and serve adequately all who wish to travel by motor car in this way.

Monroe is indeed a modern city and has kept pace with the times and is far ahead of many cities of much larger population. With its wonderful hospitality, it is a most pleasant place to live, being imbued with that element of culture and refinement that has so characterized the citizenship through its ages of history.

Monroe invites you,—the Doctors of Medicine of the great State of Louisiana, the Doctor's wives, their families, and sweethearts. The stage is set, the program made, your entertainment is assured. We want you to come. We want you to come and see for yourself. Come and talk to our business men, our manufacturers, our home-owners, our merchants, our bankers, visit the Salt-Water Natatorium, bathe in the medicinal hot salt water, play golf, go boating, and enjoy yourself. We want you to meet the profession of Monroe,—the men who are doing the Medical and Surgical work of this community. Visit them in their offices, in the Hospitals where we feel justly proud of the work that is being done. Meet them in their homes. Meet their wives and families. And above all attend the Scientific Sessions which, according to the Program and Arrangement Committees will be the most elaborate of any Session in the history of State organization.

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Getting out this Journal is no picnic.

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If we don't, they say we are too serious.

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If we publish things from other journals, we are too lazy to write.

If we stay on the job, we ought to be out rustling news.

If we are rustling news, we are not attending to business.

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Like as not some fellow will say we swiped this from another journal.

And we did.

JOIN YOUR STATE SOCIETY.

There are many reasons why every physician in the State should join the Louisiana State Medical Society and attend the annual meetings.

First, to get new inspiration from the magnificent array of talented men whose loyalty and devotion to medical science, art and research work has been the means of bringing to light so many hidden truths, and who are so thoroughly imbued with that unselfish motive of imparting to others the fundamental facts which are so necessary to keep the fires of our ambition burning. They will be there from all parts of the country, enroute to Dallas to attend the A. M. A., and they will tell you something that you should, but perhaps do not, know.

Second, to encourage medical organization. Do not indulge in the old slogan "Let George do it"; remember that our Medical Society is the super-structure of the inevitable success of our noble calling. It is the clearing house to pass upon the worthiness of applications and to check upon the deeds, acts, and attainments of all of its members. It is a postgraduate school in which you are all stockholders. Your annual dividends are paid, not in cash, but in the rich endowment of scientific achievement, which may not only redound to your own glory but may be the means of saving a community from some impending malady or, more important still, the saving of life itself. It is the lighthouse flashing its burning rays over the reefy coast of incredulity, endeavoring to shield the public

from the throes of fraud, heretics and charlatans.

Awaken your slumbering opportunities and manifest your loyalty to your profession by joining the magnificent galaxy of doctors—twelve hundred strong—and meet us in Monroe, where a splendid program is awaiting you.

Third, you should be a member of the State Society because it is the contact, or fuse as it were, that connects us with the A. M. A., a Federacy of Ninety Thousand Members, and in the language of Dr. McVey, "An organization of prodigious potentiality."

Fourth, because it offers a wonderful opportunity to cultivate the benevolent features of fraternal association for, after all, we are founded on the basic principle of brotherly love, and these annual meetigs renew old allegiances, and a spirit of co-operation reconsecrates our lives to renewed efforts to accomplish more in the future than we have in the past.

Fifth, it would be an incentive to renew our obligations to the code of ethics if perchance there are any delinquents in this respect.

Sixth, it would entitle you to protection in the medical defense fund, which sooner or later might become a vital factor in our professional activities.

Seventh, since you are one of the exponents who, by reason of your profession, has obligated yourself to render your best services in practicing the principles of preventative medicine, youl should enlist in the organized effort to have enacted and maintained such constructive legislation as would enable the profession to accomplish these purposes; otherwise, you are recalcitrant in duty to your neighbor, your brother practitioner and yourself.

Eighth, you raise your standing in the community, professionally speaking, and command a greater confidence of your clientele because they feel that your efforts are progressive.

There are reasons ad infinitum why every reputable doctor in the State should become a member of Organized Medicine, but we feel that those mentioned will suffice to remind you that a duty as well as a pleasure awaits you at Monroe.

There is another reason—and this should appeal to members as well as non-members—and that is, to show our appreciation of the splendid effort that the Monroe doctors are making for our entertainment. We understand that the program is almost complete and that it will be one of the best in the history of the Society. Monroe is a live town and has a bunch of 'live wires' to handle the meeting, and remember, too, that we will have a lot of outside talent injected into the program, which feature alone will be well worth your time. So let us all get together and act under the stimulus of "He profits most who serves best."

"LO STUDENTE."*

Only too rarely do we find the physician invading the realms of literature or poetry. Few indeed have been the names which one might care to place along side those of Oliver Wendell Holmes and S. Weir Mitchell. Engrossed by the tribulations of his calling, it is hardly to be wondered at that

*"Lo Studente," by Dr. Samuel Walter Kelley, 1925, pub. C. Hauser, Cleveland, Ohio.

so few medical men either find time or inspiration towards literary efforts. When, however, we do come across such labors of love, they are usually worth more than passing comment. Dr. Kelley's recently published masterly effort in poetic imagery entitled "Lo Studente" is no exception to the rule. His versified description of a wanderer's pilgrimage through Italy and his accounts of the city of Florence in particular are truly fascinating. His philosophy is convincing throughout the poem-narrative and in no place more human then where he says:

"Men are the authors of their miseries.
Not Nature is at fault so much as man;
Less often harvests fail than misers hoard;
There is enough if only it were shared;
Earth never yet had lack of room for sleep,
Why then should neighbors wrangle for a grave?"

Although Dr. Kelley has contributed widely to the literature dealing with early history of the American physician, a unique biographical account of distinguished French physicians, and several books of poems, his chief interest has always been the surgical diseases of children. A text-book on this latter subject first appeared in 1909 and the second edition was printed in 1914. Another work, "About Children" appeared in 1897. Both of these medical contributions have brought forth much favorable comment and have been widely read. Out of his own vast clinical experience he wrote, his books based on the pathology and physiology of child life. He is credited with being a pioneer writer on the surgical diseases of children by many authorities. He practices pediatric surgery in Cleveland at the present time, has served organized medicine in various capacities and is ever identified with movements that tend to advance problems of community health.

We welcome "Lo Studente" as a work worthy of perusal by the tired doctor, of an evening by the fireside, who seeks to be entertained, as well as for the medico who really loves good literature for its own sake.

JOHNS HOPKINS.

On February 22, 1926, Johns Hopkins university celebrated its half-century anniversary with an announcement of an impending return to its first principles of graduate instruction and research. The first two years of its present curriculum will be abolished and devote itself to research and preparation for research.

When the vision of President Frank J. Goodnow and its board of trustees has been realized, Johns Hopkins will grant doctor of philosophy and master degrees only outside of its medical and engineering schools. No date has been set for the change. It is estimated that an additional endowment of at least $600,000 will be required to put the plan into effect.

Fifty years ago, when the university's first president, Daniel Coit Gilman, was inaugurated, the trustees determined to devote the resources of Johns Hopkins to graduate education and research—at that time regarded as a new and important venture in American education.

Research having enlarged the boundaries of knowledge, including in collegiate as well as graduate teaching much that was unknown fifty years ago, the statement continues, curricula have been expanded and Johns Hopkins among other universities has extended its activities to include fields not associated with research and preparation for it, with the following results:

Graduate schools which should emphasize freedom of teaching, personal contact between teacher and student and stimulation of independent thought have been invaded by methods more appropriate to college instruction. The student preparing for research work is required to spend too many years in general study before he begins to concentrate upon productive work.

MEDICAL ADVANCEMENT IN LOUISIANA.

To The Editor:

Thirty years ago even intelligent people outside the borders of Louisiana believed that it was a land of wigglers, alligators, malaria and yellow fever. They warned against making one's home in Louisiana and such advice often had a depressing effect.

However, a year of residence brought conviction as to the delightful climate and many other natural blessings. Those who can look back thirty years will recall the visit of the late lamented Dr. J. N. McCormack, who represented the American Medical Association. He visited almost every large city in the State delivering addresses against practices in violation of medical ethics and giving instruction as to the means for the betterment of health. I recall having sat two and one half hours one afternoon listening to Dr. McCormack's delightful talk; it was before an audience of possibly 400 and I do not believe that even at the end of two hours there was a person weary of listening.

It was following this a movement was started which resulted in the last of the advertising specialists in the State. The trenched these advertising specialties were files of the newspapers will show how entrenched these advertising specialists were which gives evidences of the strength of the movement that was started on this visit of Dr. McCormack.

In 1910 Louisiana had not even been considered by the Bureau of the Census for admission into the Registration Area. As a matter of fact there were not over 8,000 deaths registered in the entire State and very, very few births except in the city of New Orleans. Upon appointment to the presidency of the State Board of Health my first official letter was an appeal for the reporting of births and deaths and in this letter the assistance of women's organization was solicited. With the assistance of the Postmaster General, the postmasters in the State and the police juries of sixteen parishes a partial system of reporting was established, the postmasters becoming local registrars. The sixteen parishes paid for the certificates. This was an entering wedge and finally the Legislature made mandatory this payment of twenty-five cents a certificate to the doctor in addition to the registrar by the local authorities of the parish and the city.

Eight years ago a narcotic survey was made of the State and it was most astonishing to find the recklessness with which some physicians prescribed narcotics. Many with no inclination to violate any law or regulation but to meet the wishes of relatives, friends or those who made an appeal for the drug. Fortunately now the law is a greater protection to the physician and the druggist than it was formerly and they may refuse in good faith to prescribe narcotics or the physician may prescribe in good faith when he knows it is required for the mitigation of suffering from disease. The registration required by the Internal Revenue Department of physicians who need to use narcotics is also a protection to them and one that is welcomed by the physician or druggist who is law abiding .

Later the controversy concerning the therapeutic value of whiskey arose. The records show that on two referendums a majority of the physicians of the Southern Medical Association held that it had no therapeutic value, but many other physicians are of a different conviction. In fact one reputable and noted physician is known to have said: "I give whiskey as a preventive and feel that I have a right to do so." The regulations regarding this subject are equally as protective as those concerning the prescribing of narcotics and

are equally appreciated by men who hold it a duty not to violate the law.

Why we should obey the laws requiring complete and accurate reporting of births and deaths, and a minimum use of narcotics needs no argument. The reasons are well known and violations are not a credit to the small percentage of physicians who refuse to obey. In the recent check some states in the Registration Area have not shown 90 per cent of deaths reported. It would be a great blow to the health and medical advancement of Louisiana to fall short of the required number. This is one more plea for co-operation in fulfilling the requirements accepted by the civilized nations as essential and imperative to advancement.*

Cordially yours,

OSCAR DOWLING, M. D.,
President, Louisiana State Board of Health.

*See table opposite page 651.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of March there was held one meeting of the Board of Directors, one Scientific Meeting and one Joint Clinical Meeting with the Charity Hospital Staff.

Dr. Aldo Castellani who was elected to Active Membership has qualified. Drs. George D. Feldner, Julian H. Lombard, Warren L. Rosen, John F. Smith and Isidore Zweigel who were elected to Interne Membership have qualified.

The Board of Directors has decided that the increase in dues which was voted at the last Scientific Meeting in February should go into effect on March 1st. This means that the dues for January and February will be $1.00 per month and the dues for the remaining months of the year will be $1.50 per month.

The Board of Directors has ordered $250.00 to be set aside annually from the recent increase in dues which money is to be used for the invitation of some prominent speaker to deliver an oration to be known as the "Stanford E. Chaille Oration." This oration to be on either medicine or surgery.

A communication from the Illinois Central Railroad is offering 1½ rate fare to Monroe for the meeting of the Louisiana State Medical Society. Full particulars are posted on the bulletin board in the Society Room.

At the Scientific Meeting held March 8th it was extremely gratifying to note the increase in attendance, there being 109 present. The following papers were presented and discussed:

"Addison's Disease," by Dr. I. I. Lemann. Discussed by Drs. R. C. Pigford, J. B. Guthrie, J. N. Roussel and closed by Dr. Lemann

"Splenectomy," by Dr. Isidore Cohn. Discussed by Drs. I. I. Lemann, A. L. Levin, J. H. Musser, Rudolph Matas, Jos. Cohen, Aldo Castellani, F. M. Johns, F. W. Parham and closed by Dr. Cohn.

"Laryngectomy for Cancer of the Larynx," by Dr. R. Clyde Lynch. Discussed by Drs. F. E. LeJeune, Rudolph Matas and closed by Dr. Lynch.

The Hospital Abuse Committee has held two meetings and will evidently have a report for the Quarterly Executive Meeting which will be held April 12th, 1926.

At the Joint Clinical Meeting with the Charity Hospital Staff cases were presented by the following members: Drs. A. E. Fossier, Walter E. Levy, H. Theodore Simon, J. A. Dana, E. D. Fenner, E. L. King, Randolph Lyons, J. Birney Guthrie, R. J. Maihles.

Total membership is 475.

REPORT OF TREASURER FOR FEBRUARY.

Actual Book Balance 1/31/26	$1,913.42
Receipts during February	$ 995.50
Total Receipts	$2,908.92
Expenditures	$ 776.01
ACTUAL BOOK BALANCE	$2,132.91
Outstanding Checks	$ 484.00
	$2,616.91
Receipts since Bank Balance	$ 111.50
Bank Balance 2/24/26	$2,506.41

REPORT OF LIBRARIAN FOR FEBRUARY.

Interest in the approaching medical meetings is reflected in the constant reference use of the Library during the month. Bibliographies have been prepared on subjects as follows:

Pyelography—(1923-25).

Placenta Praevia—(1923-25).

Unilateral Exophthalmos.

Operative Treatment of Urethral Stricture—(1921-25).

Pneumoperitoneum—(1923-25).

Hemospermia.

Enuresis in Children—(1921-25)

Fatalities and Harmful Effects of Pyelography.

Prolapse of Uterus—(1924-25).

Aneurysm of Heart.

Polycythemia Vera.

Seventy-eight volumes have been added to the Library. Of these sixty-four were received by binding, two by gift, through the courtesy of the Medical Library Association, and six from the New Orleans Medical and Surgical Journal, a list of which is given below.

NEW BOOKS.

Francke—Ocular Therapeutics, 1925.

Riley—Faith, Falsity and Failure of Christian Science, 1925.

Boyd—Surgical Pathology, 1925.

Koehler—Therapy of Puerperal Fever, 1925.

Enfield—Radiography, 1925.

Zoethout—Textbook of Physiology, 1925.

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

LOUISIANA STATE MEDICAL SOCIETY BULLETIN.

Unusual plans have been completed for the Annual Meeting of the Louisiana State Medical Society at Monroe, and we feel assured that we have prospects of one of the finest Scientific Programs ever enjoyed by our members. The social and other entertaining features have been perfected, and if we may judge by the expression from the physicians of Ouachita Parish, those physicians attending this meeting will have the opportunity of enjoying themselves to the fullest extent.

DR. E. M. ELLIS, President

I would desire to call your attention that our President, Dr. E. M. Ellis, has asked that all meetings of the House of Delegates and also the meetings of the Scientific Session of the Convention be opened on time, in order that we may be able to finish our Program. Your co-operation in this regard is earnestly requested, so that the Sessions of the House and the General Meetings may not be delayed. Also you will observe from our program it is very complete all departments, and it would be only by strict punctuality and adherence that same can be satisfactorily completed.

PLAN OF ENTERTAINMENT.

Wednesday, April 14th, 1926, 1:00 P. M.—Luncheon for House of Delegates, visitors and members, by Ouachita Parish Medical Society.

Thursday, April 15th, 1926, 1:00 P. M.—Luncheon, St. Francis Sanitarium.

Thursday, April 15th, 8:00 P. M.—Saenger Theatre. President's Address, Dr. E. M. Ellis, Crowley, La. Address, Dr. Rudolph Matas, New Orleans, President, American College of Surgeons. Address, Dr. W. D. Haggard, Nashville, Tenn., President, American Medical Association. Address, Dr. Will J. Mayo, Rochester, Minn., Ex-President, American College of Surgeons.

Friday, April 16th, 1926, 1:00 P. M.—Luncheon, Riverside Sanitarium.

Friday, April 16th, 1926, 8:00 P. M.—Smoker, Virginia Hotel.

HOTELS.

The Hotel Virginia will be the official headquarters for the Louisiana State Medical Society.

SCIENTIFIC HEADQUARTERS.

All official meetings of the House of Delegates and Scientific Session will be held in the New Court Building, in close proximity to the Hotel.

All mail addressed in care of the Convention will be taken care of at the Registration office, and a daily notice will be posted of all letters and telegrams received.

Information Bureau in Registration Office.

SPECIAL ANNOUNCEMENTS.

MEETING OF RAILWAY SURGEONS OF LOUISIANA.

The meeting of the Railway Surgeons of Louisiana has been called for Wednesday, April 14th, at 8:00 o'clock P. M., in the New Court Building. All Railway Surgeons of Louisiana and all members of the Louisiana State Medical Society are urged to be present at this meeting.

MEETING OF LOUISIANA STATE CORONER'S ASSOCIATION.

The meeting of the Louisiana State Coroner's Association has been called for Friday, April 16th, from 5:00 to 7:00 P. M., in the New Court Building.

LADIES' ENTERTAINMENT.

Many features of entertainment to be announced during the meeting. Friday evening, April 16th, 8:00 P. M., banquet for the visiting ladies at the Virginia Hotel.

GOLF TOURNAMENT.

On Sunday morning, April 18th, following the meeting, there will be a special Kickers' Tournament for all physicians of the Louisiana State Medical Society. All golfers should get in touch with Mr. Leon McHenry, New South Drug Store, Monroe, so that they may be properly entered. Handsome prizes both first and second will be offered.

REDUCED RAILROAD FARE.

Reduced rates to Monroe and return, stop over privilege of ten days, have been arranged with the Illinois Central and Missouri Pacific Railroads. When purchasing your ticket to Monroe, be sure to secure from the agent a certificate of receipt. These receipts should be left at the Registration Office for validation at the time of registering.

MONTHLY BULLETIN OF THE SHREVEPORT MEDICAL SOCIETY, MARCH

March meeting of the Shreveport Medical Society, March 2, 1926, at Charity Hospital at 8 P. M.

SCIENTIFIC PROGRAM.

A Discussion of the Submucous Resection, Dr. L. W. Gorton.

The Value of Total Red, White and Differential Findings, Dr. C. E. Hamner.

Charity Hospital,
February 2nd, 1926.

The regular monthly meeting of the Shreveport Medical Society was called to order by President Crain, at 8:00 P. M. Minutes of the last meeting were read and approved. Forty members were present.

Dr. M. E. Dodd was present in the interest of the Dodd Foundation School for Girls and was given the floor for several minutes before the regular order of business, outlining the object of the school in its different branches. At the close of his talk, Dr. Knighton made a motion which was seconded by Dr. Butler and passed, that the Society go on record as endorsing and sympathizing with the Dodd Foundation School for Girls and instructing the Secretary to write a letter conveying this message.

SCIENTIFIC PROGRAM.

Dr. Butler gave a very interesting and comprehensive paper, taking as his subject "Pathological Conditions," in which he discussed different phases of cancer. This paper was discussed by Drs. Knighton, Herold, Sanderson, Cassity and Barrow, the discussion being closed by Dr. Butler.

Dr. Rigby gave a report of a number of cases of acute and chronic infections, which were accompanied by mental disturbances. His paper was discussed by Drs. D. L. Kerlin, J. D. Young, and Caldwell.

CLINICAL CASES.

Dr. Barrow displayed several X-ray films demonstrating Pericardial Effusion.

Drs. Scales and Barrow report a case of advanced Carcinoma of the Tonsils with an apparent cure clinically, following heavy Radium and X-ray Radiation.

W. R. Harwell, Secretary.

At the March meeting of the Shreveport Charity Hospital Staff, Dr. S. C. Barrow was selected as chairman for the current year; Dr. J. K. Heard, Secretary. It was unanimously decided to publish a synopsis of the staff meeting proceedings in the New Orleans Medical and Surgical Journal.

Dr. W. A. Stephenson of Oil City (Tulane 1906) died recently in Shreveport following an operation for acute appendicitis.

On March 1st, the DeSoto Parish Medical Society held a well-attended meeting at Mansfield. Due to illness of President Jarrell, Dr. B. D. Cooper presided. Drs. Sanderson and Herold of Shreveport, present by invitation, read papers; the former on "A new method of treating Fractures of the Long Bones," the latter on "Present Status of Insulin Therapy, with report of cases."

A committee of the Shreveport Medical Society, Dr. G. A. Caldwell, Chairman, is arranging for an up-to-date medical library for Shreveport, same to be housed in a part of the Shreveport Memorial Library.

Dr. Alfred P. Crain has been elected President of the Shreveport Medical Society.

Avoyelles Parish Medical Society has elected Dr. G. Randolph Fox, Moreauville, President; Dr. B. J. Lemoine, Cottonport, Vice-President; Dr. K. A. Roy, Mansura, Secretary-Treasurer.

DeSoto Parish Medical Society has elected Dr. H. W. Jarrell, President; re-elected; Dr. Tharp, Vice-President; Dr. D. C. McCuller, Mansfield, Secretary.

East Baton Rouge Parish Medical Society has elected Dr. Robert B. Wallace, President; Dr. W. H. Pipes, Vice-President; Dr. H. D. Bulloch, Secretary-Treasurer, re-elected.

ST. TAMMANY PARISH MEDICAL SOCIETY.

The St. Tammany Parish Medical Society met in regular monthly session at Slidell on Friday, March 12th, with the following members present: Doctors F. R. Singleton, C. F. Farmer, J. K. Griffith, H. D. Bulloch, H. E. Gautereaux, J. E. Pope, R. B. Paine and A. G. Maylie.

Because of the presence of Dr. J. E. Doussan, State Registrar of Vital Statistics, the scientific program was eliminated and the Society indulged in a most interesting, instructive and animated round table discussion, led by Dr. Doussan, on Vital Statistics, and his detailed information, lucid explanations and keen repartee quickly convinced the Society that the State Registrar was thoroughly familiar with and absolute master of the subject-matter.

The next meeting will be held at Mandeville on Friday, April 9th. "On to Monroe, Let's Go."

A. G. Maylie, M. D.

At the regular monthly meeting of the New Orleans Ophthalmological and Oto-Laryngological Society on Thursday night, March 18th, a Symposium on "Ethmoditis and Sphenoiditis" was held. Drs. LeJeune, Hardin, Granberry, M. E. Brown, Homer Dupuy, Granger, Bahn, Dimitry and Daspit read papers. This Symposium will be continued on Thursday night, April 8th, when Drs. Taquino, Fuchs, Lynch, Hume, Upton and Howell will read papers.

DIED. It is with regret that we register the death of Dr. Abraham Nelken of New Orleans, on February 23, 1926. He died at the age of 49—at the height of his prestige as surgeon-urologist. Dr. Nelkin had, for many years, been head of the department of urology, Touro Infirmary, and was a senior urologist to Charity Hospital. He was a member of the executive committee of the American Urological Association.

Born in Natchitoches, Louisiana, he came to New Orleans as a boy and was educated in the public schools here and graduated in medicine from Tulane University.

Dr. Nelken is survived by his widow, who was Miss Lenoa Reiman; four children, Sam, Leonard, Cecile and Fannie; his mother, Mrs. S. G. Gainsburgh of New Orleans; a brother, I. B. Gainsburgh of New Orleans, and four sisters, Mrs. D. H. Stern and Mrs. Albert Schwartz of New Orleans, and Mrs. Sam Fried of Alexandria, La., and Mrs. Jake Damps of Plaquemine, La. To all of these to whom he was dear we extend our deepest sympathy.

THIRD DISTRICT MEDICAL SOCIETY.

The Third District Medical Society at a meeting held in New Iberia, Thursday, March 11th, elected the following officers: President, Dr. H. G. F. Edwards, Lafayette; Vice-President, Dr. H. A. Eldredge, Abbeville; Secretary-Treasurer, Dr. R. D. Voorhies, Lafayette; Delegate, Dr. A. J. Comeaux, Youngsville; Alternate, Dr. C. E. Hamilton, Lafayette. Abbeville was selected as the place for the next meeting. Over forty physicians attended the business session and scientific program at the Knights of Pythias Hall, and the supper which followed at the Hotel Frederick.

Speakers on the program included Dr. H. E. Menage, New Orleans, who gave an illustrated lecture on skin diseases. Dr. Isidore Cohn, New Orleans, spoke on sprains and fractures and illustrated his remarks with lantern slides. Dr. J. E. Doussan of the State Board of Health made a plea for closer co-operation from physicians in the matter of Vital Statistics. It was announced that the Third District led all in the State in the reporting of births and deaths.

ST. MARY PARISH MEDICAL SOCIETY.

The 1926 officers of St. Mary Parish Medical Society are as follows: President, Dr. L. B. Crawford, Patterson; Secretary-Treasurer, D. A. C. Kappel, Franklin; Delegate, Dr. C. M. Horton, Franklin; Alternate, Dr. C. C. DeGravelles, Morgan City. Dr. A. C. Kappel of Franklin asks that you kindly send him at once forms for making out credentials.

IBERIA PARISH MEDICAL SOCIETY.

The Iberia Parish Medical Society at its meeting held December 17th, 1925, elected the following officers: President, Dr. P. H. Boykin, Jeanerette; Vice-President, Dr. H. H. King, New Iberia; Secretary-Treasurer, Dr. W. F. Carstens, New Iberia; Delegate, Dr. P. A. LeBourgeois, Jeanerette; Alternate, Dr. Guy A. Shaw, Loreauville.

FRANKLIN PARISH MEDICAL SOCIETY.

Franklin Parish Medical Society met in regular session March 2nd, and decided to have two regular meetings a year, on the second Tuesday in February and second Tuesday in November. There were eight members present of the twelve enrolled, and there are only four in Parish who are not members of the State Society. The first program will be held on November 9th, 1926.

VERMILION PARISH MEDICAL SOCIETY.

At a meeting held on the 11th inst., the Vermilion Parish Medical Society was reorganized and the following officers were elected:

President, Dr. G. L. Gardiner, Gueydan; Vice-President, Dr. A. A. Comeaux, Abbeville; Secretary-Treasurer, Dr. Thomas Latiolais, Kaplain; Delegate, Dr. Leo. Saporito, Kaplan.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examinations:

PRINCIPAL SOCIAL WORKER (SOCIAL HYGIENE).

Receipt of applications for principal social worker (social hygiene) will close April 20. The examination is to fill a vacancy in the United States Public Health Service, for duty in the field, and vacancies in positions requiring similar qualifications.

The entrance salary is $2,400 a year. After the probational period required by the civil service act and rules advancement in pay without material change in duties may be made to higher rates within the pay range for the grade, up to a maximum of $3,000 a year. Promotion to higher grades may be made in accordance with the civil service rules as vacancies occur.

The duties are to organize, develop, and carry on methods and programs of venereal disease control, including work in schools and in co-operation with civic and private organizations interested in this activity.

Competitors will be rated on their education, training, and experience; and a thesis or publications to be submitted with the application.

SOCIAL WORKER (PSYCHIATRIC).

Receipt of applications for social worker (psychiatric) will close May 18, 1926. The examination is to fill vacancies in the U. S. Veterans' Bureau, and in positions requiring similar qualifications throughout the United States.

The entrance salary is $1,860 a year. After the probational period of six months required by the civil-service act and rules, advancement in pay may be made without change in assignment up to $2,400 a year. Promotion to higher grades may be made in accordance with the civil service rules as vacancies occur.

The duties are to investigate history and environmental conditions of patients; to analyze and submit data to the physician to aid him in arriving at a definite diagnosis and in outlining a course of treatment; to consider, report upon, and treat the social environment to which a convalescent patient may go or be expected to go.

Competitors will be rated on their education, training, and experience; and a thesis or publications to be filed with the application.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. Civil-service examiners at the post office or customhouse in any city.

AMERICAN BOARD OF OTOLARYNGOLOGY.

The American Board of Otolaryngology has arranged for two examinations during the month of April as follows:

St. Paul's Sanitarium, Dallas, Texas, Monday, April 19th, at 9 a. m.

Stanford University Medical School, Clay and Webster Streets, San Francisco, California, Tuesday, April 27th, at 9 a. m.

Applications may be secured from the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

HOW THE HOME FAILS THE CHILD.

Four-fifths of 400 children brought to Massachusetts "habit clinics," failed to get what a "normal" home should give to them, according to a statement by the Massachusetts division of mental hygiene.

The Massachusetts division assumes that a normal home should give a child not only food and shelter but training in conduct, affection, some of the culture of the group to which he belongs, opportunity for play, companionship with other children. According to this standard only one out of five of that habit clinic children had a real home. In most cases where the home failed the child it was not through poverty, but for spiritual reasons. For instance, of 280 children, 83 per cent received no teaching from their parents of what right or wrong behavior is; 78 per cent received no effective control, nearly 50 per cent lived in homes showing no cultural interests, 41 per cent lacked opportunity for normal play and 10 per cent were unloved.

CHILD SWEATSHOP WORKERS.

One thousand two hundred children in 600 families were found doing factory work at home, according to an investigation by the Pennsylvania Department of Labor and Industry. All these children were under 16, and half were between 10 and 14. Pennsylvania is now attempting to regulate industrial home work and to protect both the workers and the public by requiring licenses from home workers and granting them only when the law is lived up to.

WHY CHILDREN LEAVE SCHOOL.

Few children "play turant" from school, compared with the number of children staying away from school with the knowledge and consent of their parents.

Investigation of compulsory attendance laws in the State of New York by Teachers' College, New York City, showed this to be the case. The investigators recommended education of the parents rather than police methods with the child.

BOY IMMIGRANTS, AUSTRALIA.

"Big Brother" committees to look after boy immigrants have been organized in Australia, according to the official announcement of the High Commissioner for Australia in London. As soon as a boy arrives he is placed under the care of a big brother who helps him to find employment and undertakes to look after him till he is 21. The boy agrees to follow the advice of his big brother and to put a part of his wages, which are fixed for beginners at 15 s. a week and "keep," in a Government bank.

City High School, Monroe, La.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor.

To the Mississippi Doctors:

All of us are prone to want to let "George do it," and then condemn George when it is not done as *We* think it should be. This is apropos of county society members and the local secretary. We expect the local secretary to arrange a good program and furnish a splendid banquet for our periodic meetings, and we are usually not disappointed.

At this time of year we expect the secretary to remind us six or eight times that our dues for the current year are not yet paid. This he does year after year, and when the time comes to make his society report to the State Secretary not more than fifty per cent of us have paid our dues.

Along about now the Chairman of some Section asks us to contribute to his program. This we gladly do, and do it well, too, but in a few days after the Section Chairman has sent our name in to the State Secretary as one of his essayists, it is discovered in the office of the State Secretary that we have neglected to pay our dues. Then follows a great deal of correspondence, and some embarrassment, and just before the programs go to the printer our dues are remitted, and we stay on the program.

The local secretary is not to blame for all this delay and useless correspondence. He has already reminded us time upon time, but somehow we just don't do it.

If we want to make a bunch of local secretaries happy next year we can do so by paying our Society and Association dues at the time of the last meeting in the old year. Let's all try that this fall.

T. M. DYE, Secretary.

March 15, 1926.

The annual meeting of the Women's Auxiliary to the Mississippi State Medical Association will be held in Jackson, May 11th, 12th, and 13th, on which dates the Medical Association also meets there. Plans are being made for a very pleasant session, both socially and educationally. Headquarters will be at the Edwards House.

Jackson is centrally located, has ample hotel facilities, a splendid shopping district and many other features that make it attractive for women's conventions, and it is hoped that a greater number of ladies will accompany their husbands to the meeting of the Association this year than ever before. Furthermore, it is hoped that not one who does come to Jackson will fail to register as a member of the Auxiliary. It will make her visit more pleasant and more profitable in every way.

The DeSoto County Medical Society met on Monday, March 1st, 1926. On the program were the following papers:

"Some Reminiscences," Dr. W. S. Weissinger, Hernando, Mississippi.

"Some Pertinent Remarks," Dr. O. C. Brewer, President, Hernando, Mississippi.

The following officers were elected for 1926:

President, Dr. D. C. Funderburke, Olive Branch; vice-president, Dr. A. F. Weissinger, Hernando; secretary and treasurer, Dr. L. L. Minor, Memphis, Tennessee (re-elected); State delegate, Drs. Coker and Emerson; censor, Dr. A. V. Richmond.

This society meets every other month at Hernando. The attendance and interest are good, but the society hope to do even better in the future.

On Wednesday, March 10th, a staff meeting of the Vicksburg Sanitarium was held. After the Surgical Clinic, operations by Drs. G. M. and A. Street were observed, the Staff reports for the month were read, and the following current cases were discussed: Obscure anemia, pernicious anemia, and destruction by cautery of early carcinoma of cervix uteri, by Dr. G. M. Street; Tumor of cecum, sarcoma of upper femur, and gonococcus septicemia with multiple suppurative arthritis, by Dr. A. Street; After-effects of pneumothorax in a probable tubercular pleurisy, carcinoma of rectum, and exophthalmic goitre, by Dr. J. A. K. Birchett. A secondary infection of the eye following foreign body under lid was discussed by Dr. C. J. Edwards; tape worm in child, found at operation for stab wound of abdomen, by Dr. L. J. Clark; cases of chronic otitis media treated by zinc ionization, by Dr. E. H. Jones. Dr. S. W. Johnston also gave a case report.

BOOK REVIEWS

Ocular Therapeutics: By Ernst Francke, M. D. Translated by Clarence Loeb, A. M., M. D. St. Louis. C. V. Mosby Co. 1925.

We are indebted to Dr. Loeb, for having translated into English, Dr. Frankes' excellent work on Ocular Therapeutics.

The first part deals with the constitutional and general methods employed in the treatment of eye diseases. The author discusses at some length the use of tuberculin which is not surprising, because of its more general employment in tuberculosis of the eye than of any other part of the body. The reason is probably that the general and local reaction can be more easily and thoroughly studied in the eye than elsewhere. The treatment of syphilis with arsenic, mercury, iodides and bismuth is discussed in an interesting and complete manner as are the specific and non-specific proteid treatments and the therapeutic use of light and heat.

The second portion contains an alphabetic classification of medicaments used in opthomology arranged in Dr. Darriers' book on this subject. Quite a few proprietary remedies are mentioned which will probably be of little practical use to those American ophthalmologists who are not interested in mystifying their patients with high sounding but insufficient drugs.

The third portion of the book contains the names of ocular medicaments arranged according to their employment in the several diseases of the different part of the eye.

The index is complete and reasonably accurate.

On the whole, this book will serve a very useful purpose as it is the best volume on this subject recently written in English.

CHAS. A. BAHN, M. D.

L'Anatomie en Poche: By Victor Pauchet and S. Dupret. Paris. G. Doin and Cie. 1926.

The pocket edition of the atlas of anatomy, by Victor Pauchet and S. Dupret, is prepared primarily for the medical students use in riding to and from school, for the rapid review of the Interne and the Surgeon just prior to an operation.

I fail to find in the tremendous numbers of drawings a single one representing the structures as they are normally found in the cadaver. The illustrations have not been made from actual dissections, but diagramatic drawings, more suitable for an artist.

The labels and the methods of labelling are excellent.

WILLIAM C. SMITH, M. D.

The Art of Medical Treatment: By Francis W. Palfrey, M. D. Philadelphia and London. W. B. Saunders Co. 1925.

This little volume is devoted almost entirely to the treatment and management of a large group of medical conditions, diagnosis and symptomatology being entirely omitted. The subject matter is presented in a brief, yet sufficiently detailed, manner.

Many of the leading men in the medical profession are given recognition for assistance in revising the sections on the diseases in their various specialties, which doubly assures high authority and reliability.

To all students and practitioners this volume is heartily recommended.

R. T. LILES, M. D.

PUBLICATIONS RECEIVED.

J. B. Lippincott Co., Philadelphia: International Clinics, Vol. 1, Thirty-Sixth Series, March, 1926. The Pharmacopoeia of the United States of America, Tenth Decennial Revision. "Parasitic Protozoa of Man," by Charles F. Craig, M. D., M. A.

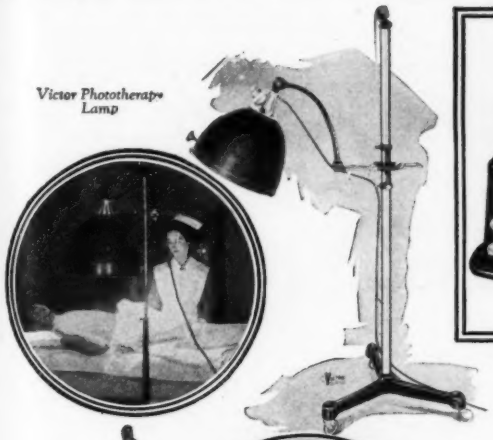
W. B. Saunders Company, Philadelphia: "Facts on the Heart," by Richard C. Cabot, M. D.

P. Blakiston's Son & Co., Philadelphia: "Recent Advances in Obstretics and Gynecology," by Aleck W. Bourne, B. A., M. B., F. R. C. S.

Miscellaneous: "Psychotherapy: Mental Elements in the Treatment of Disease," by Edward Wyllys Taylor. Forty-Eighth Annual Report of the Department of Health, State of New Jersey, 1925.

REPRINT.

"The Surgical Treatment of Echinococcosis," by H. W. Mills, M. R. C. S., L. R. C. P., Lond., F. A. C. S.



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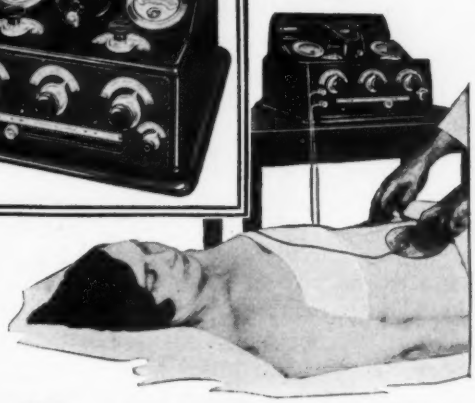

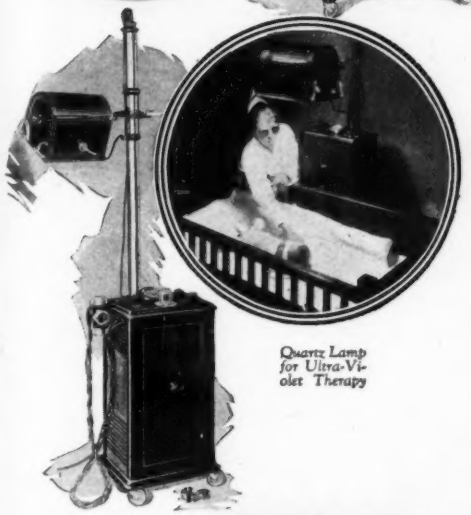

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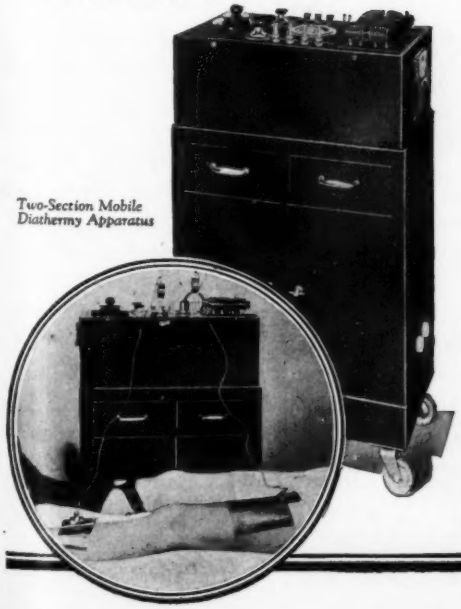

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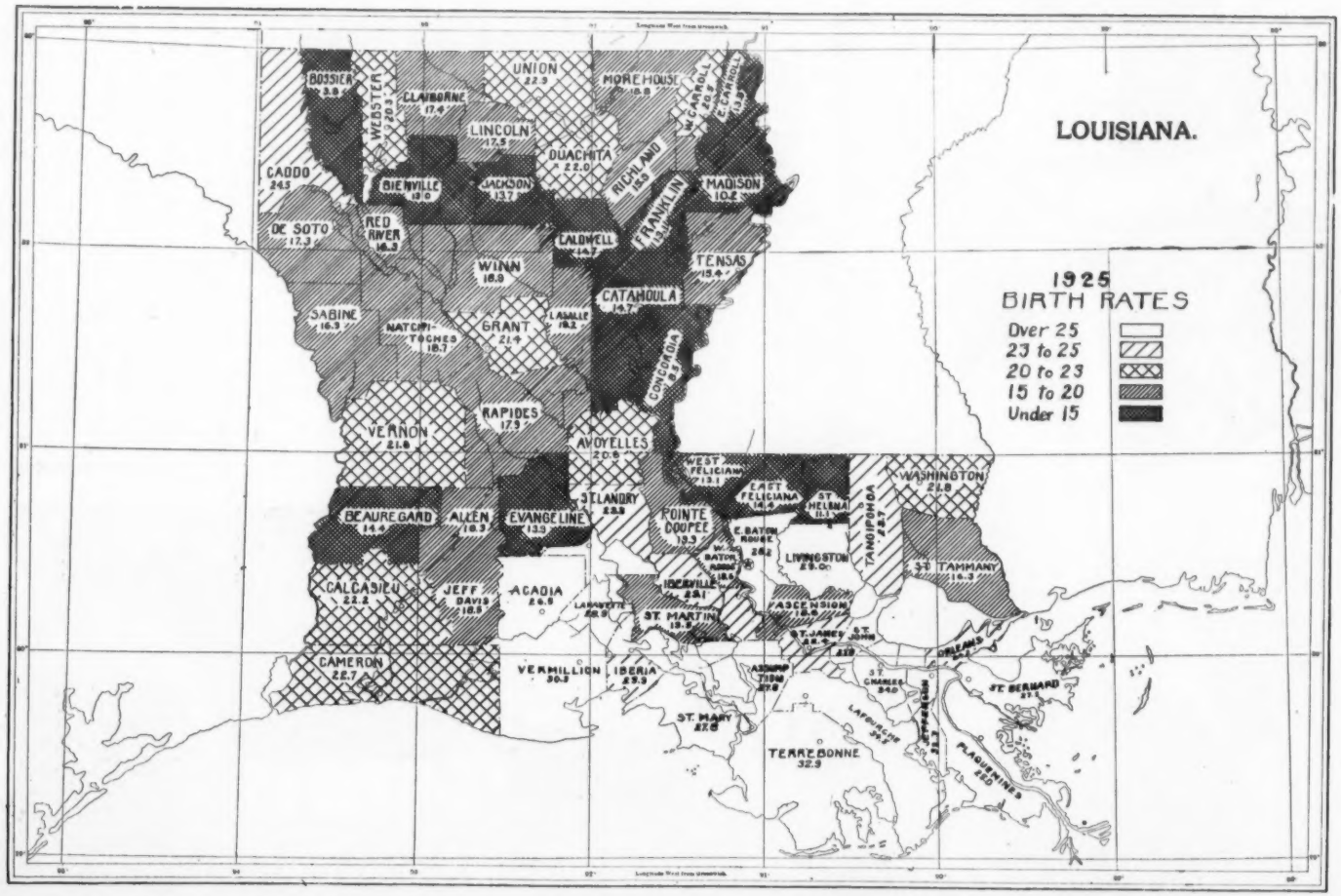
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